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Aim and Scope of the journal

The JCHS is a peer reviewed journal, published bi-annually. It covers a wide interest in community and health science related topics. The features that make JCHS so unique are:

- *It offers a platform for debate between various disciplines which is essential in helping us to understand and learn from each other.*
- *While primarily of interest to those working within health and related areas, it includes contemporary empirical and theoretical work from a wide range of disciplines, including anthropology, epidemiology, health promotion, medicine, public health, psychology, nursing and social work as well as basic and applied sciences that contribute to the promotion of health and prevention of disease.*
- *The editorial team encourages original research but support the publication of scholarly papers and scientific systematic reviews.*



Prof. José Frantz
Editor
Journal of Community and Health Science
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PHYSICAL INACTIVITY AND COUNSELING PRACTICES AMONG MEDICAL DOCTORS: A REVIEW

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ABSTRACT.

Introduction: Literature indicates that physical activity is a health practice that can prevent chronic diseases of lifestyle. It is recommended that medical practitioners, among them physicians, should hold the responsibility of counseling patients on physical activity. This review attempts to establish whether physical inactivity among physicians is a risk factor to counseling practices on physical activity.

Methods: Databases searched included Science direct, Pubmed, Eric, Health sources consumer edition, Health sources: nursing/academic edition, Sports discuss and Medline through January 2000 to February 2010. All studies testing if physical inactivity is a risk factor to counseling practices among physicians were included in the review. The "critical thinking tool for quasi experimental studies and the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instruments were used to evaluate quasi experimental and cross sectional studies respectively.

Results: Two quasi experimental studies and four cross-sectional studies met the inclusion criteria and were evaluated. There was strong evidence for an association between physical inactivity and counseling practices, indicating that physicians who exercised regularly were more likely to counsel patients on physical activity and vice versa. Levels of physical activity were seen to decrease as years of training progressed among resident physicians in one study while in another the levels were consistent. Lack of knowledge about details of physical activity prescriptions was also blamed for inadequate counseling.

Discussion/ conclusion: There is significant indication that inadequate counseling concerning physical activity by physicians may be related to their personal physical activity patterns. Measures around enhancing this health practice should be enhanced by all stakeholders including physicians and patients. Further reasons for failure to counsel and hindrances to participation on physical activity among medical doctors and other health professionals should be explored.

Key words: Physical activity, Physicians/Medical doctors, chronic diseases of lifestyle and counseling practices.

INTRODUCTION

Chronic diseases of lifestyle are contributing to the highest level of mortality in the world today.

Currently, they account for 60% of all global deaths (Commonwealth, 2008) while four out of five deaths from CDL occur in the developing world (World Health Organization, 2005). These diseases which include cardiovascular conditions (mainly heart disease and stroke), some cancers, chronic respiratory conditions and type 2 diabetes are reaching epidemic proportions worldwide (Daar et

al., 2007) and are affecting people of all ages, nationalities and classes. During 2005, chronic diseases of lifestyle (CDL) accounted for over 35 million deaths worldwide and projections indicate a 17% rise in the next 10 years, with more than 80% such deaths occurring in low and middle income countries (Duperly et al., 2009).

Substantial evidence exists regarding the benefits of physical activity on cardiovascular disease (CVD) (Yung et al., 2008). The evidence is obtained

from different population groups where leisure time physical activity reduced the risk of coronary heart disease and cardiovascular mortality in both men and women. Physical inactivity and obesity/overweight are not only associated with a number of health related risk factors, but are considered to be independent risk factors for CVD, type 2 diabetes mellitus and hypertension (Yung et al., 2008). Furthermore, stimulation of creative thinking, increased energy, reduced stress, enhanced self-esteem, and quality of life are also by-products of regular physical activity (Kennedy & Meeuwisse, 2003).

Despite the overwhelming evidence that physical activity is beneficial to those with or without a health condition, only small proportions of most populations are active enough to benefit their cardiovascular health (Kennedy & Meeuwisse, 2003). This trend is not isolated. There is overwhelming evidence that the levels of physical activity in the majority of the populations globally do not meet the standard health benefiting level of physical activity. Sixty percent of the world's population is considered inactive (World Health Organization, 2010).

In order to increase the low proportion of adults who comply with current physical activity recommendations, it is recommended that physicians provide physical activity counseling to their patients (Frank, Tong, Lobelo, Carrera & Duperly, 2007). They are well positioned to provide physical activity counseling to their patients. They are a respected source of health-related information and can provide continuing preventive counseling feedback and follow-up; and it has been suggested that they may have ethical obligations to prescribe physical activity (Lobelo, Duperly & Frank, 2008).

Although the basis for infrequent counseling may be as a result of many factors, physician lifestyle habits are known to affect both the frequency and quality of physician counseling of patients about lifestyle change (Rogers et al., 2005). This review therefore attempts to ascertain whether physical inactivity among medical doctors is a risk factor to counseling practices.

METHODS

The following databases were searched between January 2000 and February 2010; Science direct, Pubmed, Eric, Health sources consumer edition, Health sources: nursing/academic edition, Sports discuss, Google scholar and Medline was conducted. The key terms that were used to begin the search were "medical doctors, physical inactivity and counseling practices". A secondary search was done using the mesh terms which were "physicians in place of medical doctors", "lack of exercise in place of physical inactivity" and advice in place for counseling practices". In order to exhaust the search databases among those selected, those which made provision for related articles were also explored.

Studies were included only if the participants were practicing medical doctors/physicians and containing information regarding physical inactivity among them as a risk factor to counseling practices on physical activity. Furthermore articles had to be published in the English language and full text had to be available. The relevance of each study for the review was determined by evaluating the abstracts according to the PICO (Population Intervention Comparison and Outcome) level of evidence and availability of full text scoring method. All the articles attaining a score of six out of 10 and above were selected for methodological quality assessment.

Various standardized tools were used to assess the methodological quality of each article. Each article was assessed using a tool constructed to suit its specific study design. The quasi experimental studies that were selected were therefore assessed using the "critical thinking tool for quasi experimental studies" (Guyatt, Sackett & Cook, 1993). This tool rated the articles as being of high quality if above six questions of the 13 were answered 'yes' and being of low quality if less than six questions were answered 'yes'. The cross-sectional studies were assessed using the standardized critical appraisal instruments from the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instrument (JBI-MASARI) (Joanna Briggs Institute, 2008: 152). The tool was used to rate a study as being of low quality if it scored below three out of nine, moderate quality if it scored between four and five out of nine and of

good quality if it scored between six and nine out of nine points. Following this appraisal, two quasi studies and four cross-sectional studies qualified

for the review. A professional independent review for the same articles was conducted to minimize bias.

Table 1 Summary of search results

| Article title | Database source | Level of evidence | Methodological quality |
|---|------------------------|--------------------------|-------------------------------|
| A Physician Fitness Program: Enhancing the Physician as an "Exercise" Role Model for Patients. Rogers et al., (2005). | Medline | Quasi experimental study | 11/13 |
| Physician's disclosure of healthy personal behaviors improves credibility and ability to motivate. Frank, Breyan and Elon. (2000). | Google scholar | Quasi experimental study | 10/13 |
| Physical activity levels & counseling practices of U.S medical students. Frank, Tong, Lobelo, Carrera and Duperly, (2007). | Google scholar | Cross-sectional survey | 6/9 |
| Medical students' readiness to provide lifestyle counseling for overweight patients Foster et al., (2002). | Science direct | Cross-sectional survey | 6/9 |
| Personal exercise habits and counseling practices of primary care physicians. Abramson, Stein, Scchaufele, Frates and Rogan. (2000). | Google scholar | Cross-sectional survey | 7/9 |
| The association between Colombian medical student's healthy personal habits & positive attitudes towards preventive counseling. Duperly et al., (2009). | Medline | Cross-sectional survey | 7/9 |
| Physical activity promotion Are GPs getting the message? Ploeg (2007). | Google scholar | Cross-sectional survey | 5/9 |
| Physicians' advice and support for physical activity. Glasgow, Eakin, Fisher, Bacak and Brownson. (2001). | Science direct | Cross-sectional survey | 5/9 |
| Exercise counseling by family physicians in Canada. Kennedy and Meeuwisse. (2003). | Science direct | Cross-sectional survey | 5/9 |
| General Practitioner Advice on Physical Activity Who Gets It? Eakin, Brown, Schofield, Mummery and Reeves. (2007). | Google scholar | Cross-sectional survey | 5/9 |

RESULTS

A total of 10 articles were deemed suitable for inclusion in this review. These were subjected into a methodological quality rating and results are illustrated in table 1. Of the 10 articles assessed, six were finally included in the review as four articles were rated as being of low quality. The high quality rated articles are outlined in table 2.

In the six articles that were selected, the relationship between the physicians' personal health habits including physical activity and the consequent counseling practice was investigated. In all the studies, physicians whose personal physical activity levels met the moderate or vigorous recommended standards were more likely to counsel patients on physical activity (Frank et al.,

2007). They had a positive attitude towards counseling Foster et al., (2002) or were more believable by their patients when they did counseling on physical activity participation (Frank, Breyan & Elon, 2000). This was in comparison to their physically inactive colleagues. Abramson et al., (2000) also indicated that those physicians that participated in aerobic exercises were more likely to counsel their patients on the benefits of physical activity compared to those that participated in strengthening exercises. However, some of these studies identified some other factors that the physicians perceived to have been of influence to their counseling practices. These included tight schedules of their other duties, lack of knowledge/experience and inadequate reimbursement for work done.

Table 2 Studies included in the review (n=6).

| OBJECTIVE | LEVEL OF EVIDENCE | SETTING & SAMPLE DETAILS | FINDINGS | REFERENCE |
|---|---------------------------|--|---|---------------------------------|
| To determine the effects of a physician fitness program on resident physicians cardiovascular fitness, physical activity behavior and physical activity counseling behavior/attitude. | Quasi experimental study. | 48 internal medicine residents of Medical College of Georgia in U.S.A. | Resident physicians' counseling confidence and perceived success significantly improved although there was no significant change in residents' physical fitness status. | Rogers et al., (2005). |
| | | Intervention: A prospective pre and post intervention study design where a baseline for physical fitness, physical activity levels of knowledge and attitude and counseling behavior was established. This was evaluated twice in intervals of three months following an exercise program intervention. | | |
| To establish whether physician's disclosure of healthy personal behaviors improves credibility and ability to motivate. | Quasi experimental study | Two groups of patients with 66 and 65 patients for group one and group two respectively at a waiting room in an Emory University general medical clinic in Atlanta U.S.A | Viewers of the physicians' healthy behavior disclosure video considered the physicians to be generally healthier, somewhat more believable and more motivating than did viewers of the control video. | Frank, Breyan and Elon. (2000). |
| | | Intervention: Two brief health education videos | | |

| | | | | |
|---|---|--|---|---|
| | | <p>about improving exercise and diet were produced and shown to subjects. In one video, the physician had an extra half minute to reveal information about her personal healthy exercise and dietary practices and had a bike helmet and an apple visible on her desk. In video two, personal health practices were not revealed and the apple and bike helmet were not included</p> | | |
| <p>To establish the U.S medical students physical activity levels and factors predicting relevance and frequency of their physical activity counseling of patients.</p> | <p>A prospective Cross-sectional survey</p> | <p>2316 U.S. medical students from 16 medical schools sampled from a national population with public vs. private, number of students per school and underrepresented minorities balance considered.</p> | <p>More than half (61%) of the participants complied with the CDC physical activity recommendations and maintained this rate over the four years of training. The frequency of physical activity counseling of patients was consistently related to personal physical activity practices. The percentage of students perceiving that physical activity counseling would be highly relevant to their practices decreased during the four years of medical school from 69%-53%.</p> | <p>Frank, Tong, Lobelo, Carrera and Duperly (2007).</p> |
| <p>Assessing medical students' readiness to provide lifestyle counseling for overweight patients.</p> | <p>Cross-sectional study</p> | <p>290 Medical students in their first, second or third year of training at a Southern medical school in U.S.A.</p> | <p>Only 23% of the sample reported accumulating 30min of moderate activity or equivalent vigorous activity at least five days a week. The results also revealed significantly less vigorous activity reported by third year students than by first year or second year students.</p> | <p>Foster et al., (2002).</p> |

| | | | | |
|---|-----------------------|--|--|--|
| | | | Consequently the attitude towards physicians providing lifestyle counseling was significantly more negative in the second and third year more than in the first year students. | |
| Assessing personal exercise habits and counseling practices of primary care physicians. | Cross-sectional study | 298 U.S.A. primary care physicians, comprising 84 family practitioners, 79 pediatricians, 58 geriatricians and 77 interns. | Physicians who participated in aerobic exercises were more likely to counsel their patients on the benefits of exercise compared to those that participated in strengthening exercises. There were more of aerobic exercises counseling among all the groups of physicians compared to that of strength exercises. | Abramson, Stein, Scchafele, Frates and Rogan (2000). |
| To identify the association between Colombian medical student's healthy personal habits & positive attitudes towards preventive counseling. | Cross-sectional study | A total of 661 first to and fifth-year Colombian medical students. | Personal health habits among the medical students were significantly associated to their corresponding attitudes towards preventive counseling including physical activity. | Duperly et al., (2009). |

DISCUSSION

This review has confirmed that a relationship exists between health behaviors practiced by medical doctors and the health education/counseling that they offer to their patients pertaining to physical activity. Similar findings were detected from both experimental studies and cross-sectional surveys hence emphasizing the assumption that physical inactivity is a risk factor to counseling practices among physicians/medical doctors. For instance, Rogers et al., (2005) assessed the effect of a cardiovascular fitness program on the counseling confidence and perceived success of resident physicians'. The results rendered a significant improvement in physicians' confidence and perceived success pertaining to physical activity

counseling. Furthermore, Frank, Breyan and Elon. (2000) sought to establish whether physician's disclosure of healthy personal behaviors improves credibility and ability to motivate patients on healthy behaviors through the use of videos. In video one, the physician revealed personal health behaviors and had an apple and a bike helmet visible on the desk. The physician had 30 seconds to mention two things to the patient. One was about the recommended amount of calories that should be taken from fat per meal (30 %). The physician expressed to the patient how serious he was taking the diet personally and that he was feeling much better. He also briefly stated how best the patient can achieve that. Secondly, the physician mentioned to the patient that it was recommended

that he accumulates at least 20 min of fairly vigorous exercise. He mentioned about riding his bike to work while pointing to the helmet. He also advised the patient to choose the exercise he would like to do and later discuss it with his physician. In video two, the doctor's personal health practices, apple and bike helmet were not included. The viewers of video one considered the doctors healthier and believable in terms of how they motivated their patients to have a healthy diet and to exercise than in the control video. Duperly et al., (2009) assessed the attitudes towards healthy behavior counseling practices among Colombian medical students and still realized that students who practiced healthy personal behaviors had a positive attitude toward counseling on various healthy practices including physical activity.

A study that used medical students as the sample also identified a decline in their levels of physical activity as years of training progressed and consequently their attitude towards providing lifestyle counseling was significantly more negative in the second and third year compared with the first year students (Foster et al., 2002). A similar study noted consistency in activity levels (Frank et al., 2007). Abramson et al., (2000) went further to find out whether participating in either aerobics or strengthening exercises had an influence in physical activity counseling. The study found out that US physicians who participated in aerobics were more likely to counsel their patients on the benefits of physical activity.

Several studies have been done to show that physical inactivity is a risk factor for chronic diseases of lifestyle; more so, the responsibility of facilitating the worlds populations to engage in physical activity to prevent disease has ethically and professionally been bestowed on medical professionals, including medical doctors (Lobelo et al., 2008). However, little has been done to find out what factors hinder the doctors from promoting health through physical activity. A change of attitude towards personal participation in physical activity will primarily improve their personal health; promote the motivation to discuss physical activity with patients as well as improve the believability of counseling which will come as a result of disclosure of personal practices. Motivation to be physically active as early as the first year of training has been

encouraged. Incorporation of physical education in medical school would be a positive step.

This review also revealed that doctors' knowledge on the details of physical activity such as designing an exercise program with the recommended frequencies to have been a hindrance to their counseling on physical activity (Foster et al., 2002). Issues of knowledge concerning physical activity may be addressed through collaborative training whereby medical personnel who are professionally trained in matters of physical activity, such as physiotherapists become involved in drafting curriculums and participating in medical training. Although medical doctors implement professional skills in patient management, matters concerning change of lifestyle behavior may as well be linked to a psychosocial model, therefore, the subject of modifying physical activity behavior will require the doctor to be a role model while counseling. Ethically, the subject becomes more effective when a doctor practices what he/she preaches.

Professional knowledge on the details of physical activity may be lacking among the medical doctors but at least the health benefits for physical activity are known to them though their physical activity levels remain low. Having identified a positive association between participation and counseling practices, further studies are necessary to find out possible motivation strategies that can get the medical doctors participating in physical activity and consequently improving their patient counseling.

CONCLUSION

Physical activity is an important health behavior while inactivity is a health challenge. A significant portion of the population is at risk of disease unknowingly due to physical inactivity. All the stakeholders, including physicians and patients, should take a personal interest in ensuring an increase in physical activity participation. Among these should be role modeling by physicians and eventually effective counseling strategies.

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The effectiveness of indigenous knowledge in the prevention and treatment of infertility in a rural community of Limpopo Province: A social work perspective

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ABSTRACT

Background: Indigenous populations seek to attain autonomy and self-determination through the preservation, protection and revitalisation of their indigenous knowledge which has been eroded by colonization, Western culture and more recently, globalization. Indigenous knowledge systems refer to the unique, traditional, local knowledge existing within a particular environment and developed around the specific conditions of people indigenous to a particular geographical area. Sexual and Reproductive health is a state of complete physical, mental and social well-being, and not just the absence of reproductive disease or infirmity. Sexual and Reproductive health deals with the reproductive processes, functions and systems at all developmental stages of life.

Aim: The main aim of the study was to explore and describe the role of indigenous knowledge towards sexual and reproductive health and rights. The study was aimed specifically at describing indigenous methods (practices) and values used in the prevention and preservation of sexual and reproductive health. This study targeted older persons who are regarded as indigenous knowledge custodians and practitioners from a rural community in the Limpopo Province.

Methods: For the purpose of this study, contextual design, incorporating qualitative methodology, was considered appropriate and therefore, selected for exploring and describing indigenous knowledge relevant to sexual and reproductive health and rights in a rural area. The study incorporated purposive sampling in which three focus groups were conducted with older persons aged between 65 – 80 years.

Results: Sexual and reproductive health, with special reference to menstruation and fertility, have over the years been taken care of and addressed by and through application of indigenous knowledge amongst the rural people over the years. During the menstrual and mourning periods, women are allowed to have their periods uninterrupted for 7 days and 3 months respectively by men having sex.

Conclusions: Since time immemorial, African people have been successfully preventing and treating their sexual and reproductive health through indigenous knowledge successfully. Faced with the globalizing forces which promote universal approaches to knowledge and understanding, indigenous peoples have reacted by alternately seeking to re-discover ancient wisdoms as foundational directives for the future. It could be asserted that indigenous knowledge should be revisited in instances where global knowledge seems to fail to address challenges affecting people.

Keywords: Indigenous knowledge, sexual and reproductive health and rights, menstruation period, mourning period, fertility, rural area and social work

Introduction

Sexual and reproductive health and rights are the rights for all the people, regardless of age, gender and other characteristics, to make choices

regarding their own sexuality and reproduction as enshrined in the Constitution of the Republic of South Africa, Section 27 of Act 108 of 1996 as amended. They are fundamentals for socio-

economic development of the people. They include the right to access to information and services to support these choices and promote sexual and reproductive health. With the emergence of Western systems of knowledge, indigenous knowledge has been regarded as a pagan practice and therefore, relegated to the lower level. In support of this notion, Barbarin (2003:248) asserts that “. . . an erosion of traditional values create a challenging environment for development in South Africa” There is, therefore, a need not only to help bring western (global) knowledge to the indigenous people mostly in developing countries in their localities, but also to learn about indigenous knowledge (IK) from these countries, paying particular attention to the knowledge base of the poor which serves as a basis for local decision-making in health and other activities. Indigenous knowledge is embedded in community practices, institutions, relationships and rituals (World Bank, 1998).

In spite of the usefulness of indigenous knowledge to its holders, subscribers and practitioners, a large body of information has been recorded about the negative influence of indigenous knowledge (socio-cultural and religious values, practices, and customs) regarding sexual and reproductive health and rights for the survival of people in their localities (Feldman, O'Hara, Baboo, Chitalu, & Lu, 1997; Letamo & Bainame, 1997; Macdonald, 1996). For instance, the following illustrate the negativity towards socio-cultural and religious values, practices and customs. Lawoyin and Kanthula, (2010) has reported that there is a strong influence of social norms on unsafe sexual behaviour. Certain cultural and social patterns have also been shown to account for high HIV prevalence rates in developing countries. In many sub-Saharan African countries, such as South Africa, Botswana and Mozambique, it has also been documented that first sexual exposure takes place outside marriage under circumstances of low and inaccurate knowledge of sexual and reproductive health, and with very little use of family planning or other protective measures (Nare, Katz & Tolley, 1997).

Other findings indicate that, marriage is interpreted as granting men unconditional sexual access to their wives, a “right” enforced through force if necessary. Women's lower socio-economic,

political and cultural status inhibits them from making informed sexual and reproductive health choices to prevent HIV infection (Murphy & Ringheim, 2001:46-47; SAFAIDS, 2009).

This paper addresses the question of how indigenous knowledge through, traditional institutions can be used to enhance sexual and reproductive health and rights of people. There is a need to apply a culturally sensitive approach to sexual and reproductive health and rights programmes, recognizing and appreciating the valuable knowledge and the unique cultures of indigenous peoples. The understanding and promotion of sexual and reproductive rights are essential in the social work profession, not only to improve the health status of affected populations, but also to effectively advocate for social justice, protecting the rights of women, and challenging practices and policies which do not uphold basic human rights.

Social work is a helping profession, particularly with the indigent, the exploited, neglected, violated and discriminated against because of their vulnerability as highlighted by Farley, Smith and Boyle (2003). Women are more susceptible to be the victims of domestic violence, and gender-based violence due to infertility. Such victimisations might be as a result of family and community members not effectively utilising indigenous knowledge for their benefit. In such instances, social workers provide counselling. Besides that, social workers should be able to source and utilise indigenous knowledge for the benefit of their clientele. In support of this Patel (2005) argues that services should be established in collaboration with families, community, and faith-based organisations and indigenous social networks to provide care and social support with the aim of promoting well-being of the community.

Respect for cultural diversity and identity of all the communities which social workers serve is an essential part of a preventative and developmental efforts. The more indigenous communities continue to be under threat of degradation and marginalization of cultural beliefs, values, customs, practices, the more social workers need to ensure that developmental social welfare programmes not only protect these indigenous people, but learn from, value and appreciate the unique blend of

knowledge and tradition of culture and harmony with current trends that is implicit in their communities.

Background information

Indigenous people offer alternative knowledge and perspectives to address health and social ills based on their own locally developed practices of resource use (Berkes, Colding & Folke, 2000). Grenier (1998) states that previously, outsiders who were socialized and trained in the western knowledge systems (for example, social, physical, and agricultural scientists, biologists, colonial powers) ignored or maligned indigenous knowledge, depicting it as primitive, simple, static, 'not knowledge,' or folklore. This historic neglect in spite of its cause which might have been racism, ethnocentrism or modernism, with its complete faith in the scientific method; has contributed to the decline of indigenous knowledge systems, through lack of use and application. This legacy is still prevalent in instances wherein if one is confronted with a sexual or health problem, without thinking about possible indigenous intervention, one resorts to western methods of intervention. Also, in some countries, official propaganda depicts indigenous cultures and methodologies as backward or out of date and simultaneously promotes one national culture at the expense of minority cultures. Formal schooling often reinforces this negative attitude. Local people's perceptions (or misperceptions) of local species and of their own traditional systems may need to be rebuilt. Some local people and communities have lost confidence in their ability to help themselves and have become dependent on external solutions to their local problems.

Sexual and reproductive health is a pre-requisite for social, economic and human development. It is for this reason that it forms an important part of general health. The highest attainable level of health is not only a fundamental human right for all, but it is also a social and economic imperative as well because human energy and creativity are the driving forces of development. Such energy and creativity cannot be generated by sick and tired people. It is as a result of this that a healthy and active population becomes a prerequisite for social and economic development. According to Sullivan (1995: 373) women's right to health well illustrates the interrelationship and interdependence of civil,

political, economic, social, and cultural rights. Violations of a particular aspect of women's rights to health may involve violations of both civil and political rights as well as economic and social rights. Similarly, Ashworth (1993: 34) states that the issue of reproductive rights is placed in the context of civil and political rights because they are a question of autonomy or self-determination in the most sensitive and complex social and cultural reality of gender relations, rather than of health alone or in the context of environment and population debate.

In order to respond appropriately to the health needs of a community, it is important to gain an understanding of the social and cultural contexts of people's lives and to identify needs within, and in terms of, such contexts (Heggenhougen, 1991:). The social worker is in a unique and enviable position to contribute to the prevention of infertility among rural people by creating an enabling environment for them to use their indigenous knowledge where it is necessary and appropriate.

The social worker is health-oriented, conceptually and philosophically. He plays roles of a broker and/or guide, aiding the people to look for and utilize resources and ensure that a linkage is created between the person and the system that maintain health (Farley, Smith and Boyle, 2003; Lombard, 1991). Accordingly, a cultural approach in health utilizes culture as a lens through which one can gain a deeper understanding of individual and collective health behaviours and a means to formulate prevention programmes within a specific cultural context. Sexual and reproductive health is essential if people are to have a responsible, safe and sexually fulfilling lives. Sexual health requires a positive approach to human sexuality and an understanding of the complex factors that shape human sexual behaviour. These factors (indigenous knowledge values, practices and customs) affect and determine whether the expression of sexuality leads to sexual health and well-being or to sexual behaviours which put people at risk or make them vulnerable to sexual and reproductive ill-health.

Then bringing the indigenous knowledge (socio-cultural approach) into sexual and reproductive health will therefore, allow for prevention efforts not to rely solely on the import of foreign and

biomedical concepts as a means of prevention, but also to utilise local knowledge for sustainable and appropriate health programmes and prevention efforts since well health is something that people have to strive for (Heggenhougen, 1991), it has to be realised through a process which begins with prevention at the local level, on distinctly local terms (Somma & Bodiang, 2003).

Aim and Objectives of the Study

The main aim of the study was to examine the effectiveness of indigenous knowledge (socio-cultural and religious norms, values, practices and customs) in shaping sexual and reproductive health and rights choices among rural community people in the Limpopo province and to delineate the roles of a social worker which are advocacy, broker, guide, social work researcher and educator.

In order to achieve the main aim of this study, the following objectives were set:

- To describe the nature of infertility and childlessness amongst people in rural communities
- To establish how infertility and childlessness can be prevented and treated using indigenous knowledge among the rural people of Limpopo Province.

Research Design and approach

Much indigenous knowledge research, such as traditional healing, protection of IK and the rights and interests of indigenous medicine, relies on social science techniques which are mainly in the form of interviews which yield qualitative rather than quantitative data. Researchers, such as Grenier (1998), Kibuka-Sebitosi (2008) and Sodi (2009) have a variety of ideas for designing and conducting a good interview. In order to obtain an understanding from the perspective of the older persons on sexual and reproductive health and rights, a qualitative, explorative, descriptive and contextual design was ideal to provide rich information from participants' perceptions and experiences within their natural setting (Babbie & Mouton, 2001). This research was explorative-descriptive which involved narrating the behaviour of participants without influencing it in any way. In other words, it was qualitative in nature, which enables its readers to gain a better insight into the

indigenous knowledge and sexual and reproductive health and to generate possibilities for future research (Durrheim, 2006; Babbie & Mouton, 2001). Individual interviews were used which De Vos (2002) asserts that they are meant to gain a detailed picture of a participant's beliefs about, or perceptions or accounts of a particular subject.

Contextual design has developed within the information systems design practice of the high technology industry. Contextual Design is a popular human-centered design method from the field of information systems design (Beyer & Holtzblatt, 1998). Contextual design practitioners herewith as social science researchers conduct focused field observations, validate or adjust their interpretations in discussion with participants (Notess, 2005). According to De Vos (2002) people's behavior becomes meaningful and understandable when placed in the context of their lives. Without a context, there is little possibility of exploring the meaning of an experience. Terre Blanche, Kelly and Durrheim (2006) contend that the meaning of creations, words, actions, and experiences can only be ascertained in relation to the context in which they occur. The principle of understanding in context has a strong influence in the development of qualitative methodologies.

The rationale for this methodology was also rooted in the attempt to discover valuable, practical and appropriate information regarding the sustainability of indigenous knowledge and the significance of this body of knowledge in relation to sexual and reproductive health and rights. It was also focused on how this IK discovery could promote its utilisation in relation to sexual and reproductive health and its relevance to developmental social welfare services.

Population and sampling

The sample was a purposefully selected group of individuals who could provide information to understand the phenomenon of indigenous knowledge in the context of infertility and childlessness. The study population was, therefore, limited to the older persons perceived as indigenous knowledge holders and practitioners from a rural community in Limpopo Province. Purposive and snow-ball sampling were used in this study. The sample was a purposefully selected

group of 10 older persons who could provide information to understand the phenomenon of sexual and reproductive health and rights. "Purposive sampling is appropriate to select unique cases that are especially informative" (Neuman, 2006:222). De Vos (2002) states that snowball is aimed at approaching a single case that is involved in the phenomenon to be investigated in order to gain information on other similar persons. The researcher approached two IK holders and practitioners whom he knew and unwittingly, they referred him to other participants as they indicated they had interacted with them on IK issues. The hope was that each one would refer the researcher to the one he or she has worked with on IK issues, particularly on issues of infertility and childlessness. This qualitative study is ultimately concerned with information richness and not representativeness (Patton, 1990 in Julie, Daniels & Adonis, 2004).

Data collection and analysis

Structured individual interviews (face-to-face) were conducted with each older persons purposefully selected and each referred the researcher to the next indigenous knowledge holder and/or practitioner. This method was selected as it provided an opportunity to minimize variations in the questions posed to the participants and to make sure that all relevant topics are covered (De Vos, 2002). Participants (indigenous knowledge holders and/or practitioners) were visited at their homes and appointments were secured with each one of them. Informed consent of participants was obtained prior to data collection. The consent form explained the purpose and nature of the study, gave assurance of anonymity, confidentiality and the right to withdraw from the study. The aim and objectives of the study were explained and they agreed by signing the consent form.

Structured individual interviews which had mainly open-ended questions based on the underlying objectives of the study, guided the interview process. The interviews were tape-recorded with the permission of the participants, transcribed and thematically analyzed. For the researcher to verify and maintain accuracy, he was guided by the viewpoint that qualitative data analysis involves bringing order, structure and meaning to the mass of information collected (De Vos, 2002). Data was analyzed thematically. Thematic analysis is a

search for themes that emerge as being important to the description of the phenomenon (Daly, Kellehear, & Gliksman, 1997). The process involves the identification of themes through "careful reading and re-reading of the data" (Rice & Ezzy, 1999:258). It is a form of pattern recognition within the data, where emerging themes become the categories for analysis.

In support of that, Terre Blanche, Durrheim and Kelly (2006:322 - 326) outline these steps as follows: Step 1 is the familiarisation and immersion (getting to know the data and engaging the data from the tape recorder, field notes and interview transcripts). In Step 2 is the inducing themes (working with themes that are easily noticeable). These themes emanate from the data relating to the research aim. Step 3 entails coding (breaking up the relevant data in understandable means). Step 4 is elaboration (getting fresh view of the data by exploring themes more closely) and Step 5 is interpretation and checking the data (the researcher provides clarification and assessment of the data).

Results and Discussion

A total of 10 older persons who are regarded as indigenous knowledge holders and practitioners were individually interviewed. Contrary to traditional knowledge of confining indigenous knowledge to women, men also have this knowledge today. It was found that with the use of indigenous knowledge, sexual and reproductive health and rights were promoted and maintained for the benefit of the good health of the society. Presentation of the results and subsequent discussions are based on the following two themes:

- **The nature of infertility and childlessness amongst people in rural communities**

One of the most important and underappreciated reproductive health problems in developing countries is the high rate of infertility and childlessness (Bergstrom, 1992; Leke et al., 1993). Infertility has a major impact on the reproductive health of men and women living in Africa (Dyer, 2008). According to Ombet, Cooke, Dyer, Serour & Devroey, (2008) more than 70 million couples suffer from infertility worldwide, the majority being residents of developing countries. They further

assert that negative consequences of childlessness are experienced to a greater degree in these countries as compared to the developed ones. Although this impact varies from region to region, it is influenced by, among others, religious, socio-cultural and legal factors. The inability to procreate is frequently considered as a personal tragedy and a curse for the couple as it impacts on the entire family as well as the local community as a whole. Negative psycho-social consequences of childlessness are common and often severe (Daar & Merali, 2002; Dyer et al., 2002a,b, 2004; Umezulike & Efetie, 2004; Dyer, 2007). Infertility, on the other hand, leads to both psychological and social hardship as childless marriages often result in divorce. These complete separations mainly ensue from extramarital relationships (de Kok, 2009).

Responding to the question of what the socio-cultural and religious norms, values, practices and customs are on the couple who are infertile in the rural community of Limpopo Province, one indigenous knowledge (IK) holder and practitioner said:

“Ku pfumala n’wana i khombo lerikulu. Loko munhu a ri hava n’wana swi fana niloko a nga zangi a va kona kumbe a nga hanyi hikuva ku hava mbewu leyi a nga ta yi siya, rixaka rero hikona ri file,” which means literally that not having children is a huge disaster. If a person does not have a child of his/her own, it is as if that person does not exist as there will not be any continuity in his/her generation.

In another interview, one IK holder and practitioner related her experiences of how socio-cultural and religious norms, values, practices and customs have impacted her childless life:

“Hi ku pfumala n’wana, va ndzi rhumele eka rikwerhu leswaku va ya vona kuri ndza veleka, loko swi nga ri tano ndzi nga ha tlheleli evukatini,” which means that not having children, they sent me back to my parents’ home so that they must see to it that I bear children, if not that, she should not return to her husband’s house.

There are instances where the husband will request the wife to allow him to marry the second or even the third wife in certain cases where there is

barrenness in the family. This was confirmed when another IK holder and practitioner stated that:

“Tatana loko a vona nkarhi wu famba ku ri hava n’wana, u ndzi komberile leswaku a teka nsati un’wana leswaku a ta n’wi velekelo vana.” which means after realising that there is a child-bearing problem, the husband has sought consent from her (the principal wife) to marry the second wife so that she can bear children for him.

The problem of infertility among the couples also involves other family members. Dyer, Abrahams, Mokoena, and Van der Spuy (2004) state that at times other family members’ reactions to infertility seemed to be based on perceived violations of social values, norms and practices. In support of that, for instance, Gerrits (1997) notes that some of her (Mozambiquan) respondents realize that infertile women feel bad when excluded, but argue that “these cultural taboos have to be respected. If the infertile women do not follow the cultural rules, they or their relatives will get serious (health) problems.” Gerrits (1997) in her study also found that it is also acknowledged by rural people that bearing children will sustain patrilineal clan.

These socio-cultural norms, values, practices and customs as well as taboos should be conformed to if recurrence of unfortunate and undesirable instances of not giving birth to children is to be avoided. In describing what socio-cultural and religious norms, values, practices and customs really are in relation to infertility and childlessness, IK holders and practitioners advanced a wide array of views. An elderly female IK holder and practitioner related her views and experiences of the issue when she said:

“Evuton’wini ku na swiyila. Loko wansati a ri emasikwini, a nga fanelangi kuri nchumu lowu a wu tirhisaka ku susa ngati liya yi humaka yi voniwa hi vanhu kumbe a cukumeta laha vanhu va nga yi vonaka. Naswona loko a ri emasikwini a nga fanelangi a etlela na wanuna hikuva swi ta sivela mbewu ya wanuna ku mila”. This loosely means that in life there are taboos. If a woman is in menstruation period, she is not supposed to expose the cloth she uses to clean up the blood and that should not be seen by people. Again, she should not have sex as that could prevent the male to procreate.

Another IK holder and practitioner indicated that:

“Wansati loko a humele hi khwiri, a nga fanelangi ku etlela na wanuna ku fikela tin’hwetit tsevu ku ya eka lembe. Sweswo swi ta pfuna ku ri a hatla a kuma vana”. It means that when a woman is in menstrual period, she should not have sex until at least six months to a year have passed by. This custom will enable her to conceive very urgently.

Furthermore, they outlined that both men and women should respect cultural values, customs and practices which pertain to sexuality and reproduction. Results from qualitative studies conducted in other regions document similar as well as additional findings. The findings indicate that failure to adhere to cultural taboos and God’s will, are among the central causes believed to cause infertility (Feldman-Savelsberg, 1994; Sundby, 1997 & Koster-Oyekan, 1999).

- **Treatment of infertility and childlessness using indigenous knowledge among rural people**

The participants unanimously stated that infertility was treatable using indigenous knowledge. They said that there were various ways employed when marital partners get it hard to give birth to children.

- ◆ **Use of herbs**

First, they would look at the type of food the marital partners eat and if, to their way of thinking based on their experiences, it is wrong, they would prescribe the correct diet for them. Preferably, food high in nutrition (peanuts, fruits and vegetables) was recommended.

“Loko endyangwini ku nga ri na vana, hi vumbirhi bya vona, nuna na nsati hi va lunghisela mbita. Laha mbiteni ku swekiwa murhi lowu wu nga ta pfluxa ku navela ka swa masangu hi vumbirhi bya vona. Endzhaku ka tin’hwetit tinharhu ku ya eka mune, u fanele ku vona swin’wana swi cicile eka wansati. Enhenhla ka sweswo, loko wanuna kumbe wansati a nwa byalwa kumbe madhleke, ku cheriwa chigwana, u ta n’wi twa a ku wanuna wa penga nakambe loko o kuma wansati, wansati u ta nkekela’. It means that if there are no children in a household, special medicinal herbs are prepared for both partners. These medicinal herbs activate their sexual prowess. After two to three months, a

woman may conceive. Furthermore, when an infertile woman or a man drinks alcoholic beverages, a certain concoction (chigwana - medicinal herbs) is poured into the drink, with the belief that he will be sexually stimulated. This is supported by Mashamba (2009) who indicated that some treatment methods include prescribing herbal medication and timing sexual intercourse to coincide with the fertility period.

- ◆ **Use of traditional and/or spiritual (faith) healing**

In case there are no positive results in terms of a woman conceiving, traditional and/or spiritual healers will be consulted. It was revealed that traditional healers will as well prescribe herbs which have to be taken at a certain period. Some people, depending on their faith; consult spiritual healers for solutions. Spiritual (faith) healers also give their spiritual injunctions which have to be followed accordingly as well.

Another participant painted a very personal and touching story of her infertility. She indicated that many doctors (medical practitioners) confirmed that she would never conceive according to their findings. She stated that after consulting the spiritual (faith) healer with her problem, she fell pregnant and gave birth to twins.

Several other studies describe the important role that herbs, medicinal drinks, amulets, cleansing rituals, spiritual and religious healers play in the prevention and treatment of infertility in Africa (Ebomoyi & Adetoro, 1990; Gerrits, 1997; Seybold, 2002). Collectively, these studies indicate that, although traditional health systems may differ in their individual context and in the beliefs upon which they are built, their overall role and structure is remarkably similar throughout the continent (Sundby, 1997). In southern Chad, infertility-related health-seeking behaviour is referred to as ‘looking for children’ and ‘doing research’ (Leonard, 2002). At the outset of this ‘research’ the cause of infertility has to be identified, often from a multitude of possibilities. Infertility secondary to social discord is managed through the traditional health system. Interventions involve reconciliation ceremonies, food offerings and ritual cleansing. In contrast, help is sought from the biomedical sector for most of the somatically expressed causes of infertility (such as

infections, worm infestation and a 'dirty' womb). Marabouts, who are healers connected with the Muslim faith, play an important role in providing infertility-related health care in the Gambia (Sundby, 1997). Interventions are usually based on medicinal drinks and amulets containing writings from the Koran. Other aspects of traditional health care involve spiritual healers, herbalists, fortune tellers and visits to sacred places. According to an anthropological study in Nigeria, infertility may be managed by a number of different traditional healers including local reproductive health specialists, herbalists and spiritual healers (Koster-Oyekan, 1999). Treatment involves sacrifices offered to deities or ancestors, various ceremonies to lift evil curses as well as powders and medicinal soaps to treat different causes of non-conception. Linked to these interventions are preventative strategies which include charms, herbs and the adherence to cultural taboos. A further preventative strategy is the avoidance of contraceptives and vaginal speculum examination as these are believed to be possible causes of infertility (Koster-Oyekan, 1999).

Implications for social service professionals (social work practice)

Striving for cultural competence comes from acknowledgment that society is rapidly becoming more diverse, and along with this growing diversity come divergent beliefs, norms, and value systems (Manoleas, 1994; Mason, Benjamin, & Lewis, 1996; Matthews, 1996; McPhatter, 1997; Ronnau, 1994; Sowers-Hoag & Sandau-Beckler, 1996). In part, striving for cultural competence is recognition of the profession's ethnocentric foundation. Social work has historical roots in England, and this cultural legacy may lead social workers to operate from a professional belief system antithetical to cultural values, norms, and beliefs of some clients (Weaver, 1998). Mason, Benjamin, & Lewis (1996) have acknowledged that Eurocentric values have dominated the sciences including the behavioural and social sciences and have been transmitted as universal cultural standards. This transformation begins to signal the unavoidable rattle between dominant perspective which is Eurocentric worldview and non-dominant cultural approach which is Afrocentric worldviews. This peculiarity frequently symbolizes a point of rasping between two systems which is the social work professionals

who is trained from Eurocentric worldview and the clientele who has a different worldview and in particular, Afrocentric worldview (Mason et al., 1996). In the past social workers and social welfare systems have imposed American middle-class norms as rigid standards for clients (Pinderhughes, 1997).

Knowledge about various cultural groups is essential for cultural competence in social work practice (Dana, Behn, & Gonwa, 1992; Manoleas, 1994; Mason et al., 1996; Matthews, 1996; Pierce & Pierce, 1996; Ronnau, 1994; Sowers-Hoag & Sandau-Beckler, 1996). Awareness of the personal and professional's own values, biases, and beliefs is important for cultural competence and relevance (Mason et al., 1996; Ronnau, 1994; Sowers-Hoag & Sandau-Beckler, 1996).

A culturally competent social worker must value diversity and understand the dynamics of differences in terms of values, practices and customs (Manoleas, 1994; Mason et al., 1996; Ronnau, 1994; Sowers-Hoag & Sandau-Beckler, 1996). Culturally competent social work practitioners go through a developmental process of shifting from using their own culture as a frame of reference for assessing the behaviours of their clients (Krajewski-Jaime, Brown, Ziefert, & Kaufman, 1996).

The participants' experience indicates that there is a need for an education on indigenous knowledge regarding infertility and childlessness, when developmental social welfare services are rendered. These services should be rendered through prevention of social ills such as domestic violence due to childlessness by using social work primary methods of casework, group work and community work, particularly community education model. It is important for developmental social welfare service providers to develop a shared philosophy, mission, vision, values and outcomes alongside indigenous knowledge. Of course, developmental social welfare service should be based on collaboration with an emphasis on reciprocity and equity. Increasingly, however, a new way has been to focus on the interface between indigenous knowledge and modern knowledge systems, such as sexual and reproductive health and rights, to generate new insights, built from two

systems. The interface approach recognizes the distinctiveness of different knowledge systems, but sees opportunities for employing aspects of both so that dual benefits can be realized and indigenous worldviews can be matched with contemporary realities. The emergence of new, complex social and health concerns demands that the public health field strengthens its capacity to respond by acknowledging both bodies of knowledge: indigenous knowledge and western knowledge. The social work profession, with its longstanding involvement in public health and emphasis on ecological approaches, has been a partner in many trans-disciplinary community-based efforts.

Conclusions

This article has discussed the African worldview (indigenous knowledge application) as the basis for practice in the helping professions, with particular reference to social work practice. The article has pointed out socio-cultural values, norms, practices, beliefs and customs that a helping professional should take into account when dealing with African clients. The main thrust in this discourse has been African socio-cultural beliefs inform the behaviour of African clients, particularly when Africans face health and psycho-social challenges that life presents to them. Helping professionals should know African socio-cultural beliefs in order to appreciate what informs the behaviours of African clients (Thabede, 2008).

Understanding the motivations and constraints of all indigenous knowledge holders and practitioners as well as social workers involved in the sexual and reproductive health and rights service provision, provides a foundation for effective collaboration planning. This allows for the identification of the diversity of strengths and weaknesses that could influence the strength of the collaboration and makes it possible to focus on the strengths and to minimise the weaknesses. Understanding the diversity of the context of each of the different partners is crucial to the sustainability of the sexual and reproductive health and rights services as it prevents misunderstandings and ensures a supportive environment. In support of that, Williams (1997:14) state that "If we care about families and children, we have an ethical imperative to make culture and cultural competence central to everything we do".

The data collected are a useful indication of concerns and successes of those who are involved in the developmental social welfare services focusing on sexual and reproductive health and rights and it is envisaged that these will generate possible hypotheses which could be explored in further research studies on this topic.

Contrary to claims and thinking that indigenous knowledge is inferior to Western knowledge and a hindrance to development, the existence and survival of the people in rural communities without basic amenities is a testament to the value of their indigenous knowledge as they continue to thrive with the Mother Nature. This indigenous knowledge system is dynamic in nature and belongs to a group of people who live in close contact with the natural world, allowing a co-existence between them and their environment. In rural communities in the Limpopo Province there is a reservoir of indigenous knowledge used by such communities for the benefit of their inhabitants. Most of this body of knowledge has not been documented. Myths and legends provide ethical and moral education to instil respect for people and the environment.

Health problems and health practices of rural communities have been profoundly influenced by the interplay of complex social, cultural, educational, economic and political practices. The study of health culture of rural communities belonging to the poorest strata of society is needed as it is essential to determine their access to different health services available in a social set up. Common beliefs, customs, traditions, values and practices connected to health and disease have been substantially discussed. In most rural communities, there is a wealth of indigenous knowledge associated with health beliefs. The health culture of a community does not change so easily with changes in the access to various health services (Balgir, 2004a). Hence, it is required to change the health services to conform to health culture of rural communities for optimal utilisation of health services. The indigenous knowledge of the people in rural communities is an embodiment of age-old traditions which have been passed on from generations to generations. Despite the 'greed' associated with the way in which this knowledge is jealously guarded, protected and confined to the

keeper of unique, specific knowledge, these bodies of knowledge are usually for the good and sustainability of the community and its members. Such knowledge is not meant for everyone, but only to those who are considered to be qualified to guard such knowledge with outmost wisdom and secrecy.

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DEVELOPING PROGRAMS TO SUPPORT CHILDHEADED HOUSEHOLDS IN ZAMBIA: CRITICAL LESSONS

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Abstract

As a phenomenon child headed households have emerged in most sub-Saharan African countries hardest hit by HIV/AIDS and poverty. The impact of HIV/AIDS in particular has devastated the capacity of communities to provide critical care to vulnerable young people affected by HIV/AIDS. As challenges faced by child headed households intensify a plethora of programs has emerged as a frontline response to this problem. Some programs have shown promise in terms of positively impacting child headed households. But more needs to be done to improve their overall well-being. In order to make a contribution to this area this study used a qualitative approach to conduct focus groups for sixteen Africans living in Richmond, Virginia with a view to developing a program for child headed households in Zambia. Using thematic analysis and data units to analyze the data results suggest that feasibility, content and quality are critical components for programs targeting child headed households. Results also highlight need to pay attention to funding, staff training, collaboration, education and civic education, health services, targeted services, involvement of young people, community involvement, and extended Families.

Key words: HIV/AIDS; child headed households; poverty; programs

Introduction

While there have been orphans in much of Africa for a long time, in part due to a comparatively high incidence of poverty, AIDS has swelled their number in many countries. In Africa, HIV/AIDS orphans have increased from 3.5% in 1990 to 32% in 2001, and it is estimated that there are 20 million orphans in Africa (Subbarao, Mattimore & Plangemann, 2001). Orphans in Africa constitute a significant development issue and Sengendo and Nambi (1997) have outlined three primary reasons that have contributed to their gloomy situation. First, the sheer number of orphans and the size of the problem is a threat to the traditional care-giving capacity of communities. Second, true to the African tradition, most orphans are placed either in extended families or in fostering households, yet this communal arrangement may come at great cost to these households.

And third, faced with limited resources, households taking in orphans favor their biological children, denying orphans in their care access to education,

health care, and proper nutrition (Phiri, Foster & Nzima, 2001; Kwofie & Milimo 2000; Yamba, 2001). The cost of looking after orphaned children is high for families already burdened with poverty. Makame and Grantham-McGregor (2002) reported similar findings in a study of orphaned households in Rwanda. Similarly, Yamba (2001) and Ntozi (1997) found evidence of poverty and disparities in provisions of care to vulnerable children in households with orphans in Zambia.

Child Headed Households

Child Headed households (CHHs) exist for several possible reasons, among them HIV/AIDS and poverty (Luzze, 2002). In Zambia, HIV/AIDS has altered the structure of the family and has led to a proliferation of CHHs. Kwofie (2003) found similar results when he documented that periods of poverty and limited resources mean that there are limited options for supporting CHHs. According to Luzze (2002) this happens when the eldest child is a drug addict and unable to care for others. Lugalla and Mbwambo (1999) have stated this clearly by

positing that vulnerable children may have opinions about how to “manage day-to-day affairs, and quibbles about their specific chores such as fetching water and sweeping” (p. 34). The existence of CHHs is a phenomenon that demonstrates the limited capacity traditional households have in coping with the challenge of caring for them children.

Children in CHHs may have extended families who are burdened in their own family situations, and who are therefore unavailable to them. Lacking traditional family options, families of youngsters are being constructed without adult supervision or the necessary support to consolidate their efforts to live independently. Ntozi (2000) observes that CHHs need a supportive environment for normal growth and development.

The phenomenon of CHHs has been reported in academic and non-academic governmental organizational circles (Mann, 2004). While there has not been serious examination of the issues of these households in Zambia, there has been discussion of the circumstances of such households by non-governmental organizations particularly in regards to the establishment of programs to support CHHs. Organizations such as United Nations have increased their recognition of the strengths and difficulties of these households.

While the situation of CHHs in Zambia is complex in the matter of welfare, that there are children living in CHHs at all demonstrates the strength and capacity of these households. Findings of a study by Luzze (2002) suggested that children in these households demonstrate the strength to survive as families even without the protection, support, and benefits that are potentially present in the lives of other children. Yamba (2001) supports this argument and comments that children in CHHs take on the task of caring for themselves and others, and often make “important decisions about their lives” (p. 45). Very few programs recognize the strengths of CHHs and most of them churn out services that do not address issues affecting CHHs. Several studies have reported poor outcomes for most programs supporting CHHs (Foster, Levine & Williamson, 2007; German, 2003; German, 1996; Kopoka, 2000; Richter, Manegold & Pather, 2004). Further, there are gaps and insufficient literature

that provides evidence of how these programs are designed and what elements are crucial for developing CHHs programs.

There is need to develop programs that will enhance the well-being of CHHs. This qualitative study was an attempt in that direction. The purpose of the research was to identify elements from views provided by Africans living in Richmond, Virginia in the United States of America that might be used in developing programs to support CHHs in Zambia. In recent years, the number of African immigrants in Richmond has been growing. They have come from different parts of the African continent. Because of their familiarity with both the African and American cultural contexts, they provided multiple views on what elements from Richmond would work best in developing programs for CHHs in an African context.

It was difficult to find participants who were all from Zambia and living in Richmond. Therefore Africans from different African countries served as study participants. The study was conducted in Richmond because it's a city with fairly good number of African immigrants. Second, participants had children receiving services from independent living services. Independent living services are mandated by federal as well as state governments to provide services to young people with troubled backgrounds. Although different contextually lived experiences of young people in independent living services are similar to those of CHHs. Previous studies done on the efficacy of independent living services have suggested good outcomes (Collins, 2004; Jaklitsch, 2003; Lindsey & Ahmed, 1999; Propp, Ortega & NewHeart, 2003; Propp, Scannapieco, Schagrin, & Scannapieco, 1995). Cultural competence was used as the study's theoretical framework.

Theoretical Framework

Several definitions of cultural competency have been given. For example culture has been associated with “integrated patterns of human behavior that includes thoughts, communication, actions, customs, beliefs, values and institutions of a racial, ethnic, religious or social group that is relevant to everyone's well-being” (Cross, Bazron, Dennis & Isaacs, 1989, p. 25). It has also been linked with socio-demographic and ethnic

population differences in general, as well as how ethnic, cultural, social, environmental and historical factors may influence specific behavior (Carkhuff & Williams, 1979; Leon, 1981).

Taken one step further, the term cultural competency in programming and service delivery has been used to refer to an ongoing commitment and design of appropriate services and policies for different populations (Tervalon & Murray-Garcia, 1998). It recognizes that individuals, institutions and programs can vary in the effectiveness of their services. Further it pays attention to crucial ideas, attitudes and behaviors that can be integrated into the practice of methods of a system, agency, and program. It also enables people providing services to work effectively in different situations. Cultural competency is achieved by transferring and integrating knowledge about services, individuals and groups of people into specific different practices and policies applied in other appropriate settings (Julia, 2001).

This study unfolded within a cultural competence framework that allowed participants to voice their viewpoints concerning relevant practices for CHHs in Zambia. In the following sections the paper focuses on the methodology, ethical requirements, results, and then main discussion including conclusion.

Methodology

A grounded theory design was utilized using a qualitative research. Grounded theory is defined by Glaser and Strauss (1979) to refer to theory that is inductively derived from data. It is context-bound and situation-specific. The final measure of whether or not the elements identified are crucial for programming will be assessed when they are finally tested and implemented in Zambia.

Using a qualitative approach the following research question was explored: What elements of current service delivery to adolescents in independent living services in Richmond, Virginia, can serve to develop generic programming for child-headed households in Zambia? The main objective of the study was to identify those elements that Africans in Richmond consider as important for programming to support CHHs in Zambia. The discussion section answers this objective. Participants were recruited

using snowball and convenience sampling methods. Those participants known by the researcher were contacted directly. In other instances, participants with whom the researcher had previous contacts contacted other participants. Flyers were given to participants to distribute in areas where Africans lived or frequented most.

There were seven male and nine female participants. Participants had different occupations and their ages ranged from 24 to 60 years. Their professional educational backgrounds ranged from divinity, mechanics, theology, business administration, accounting and others had just high school diplomas. Only five of the female participants were not married. All participants had children and their family sizes ranged from one to six children.

Focus groups were used to collect data from participants using a focus group protocol as suggested by Padgett (1998) and Patton (1990). Data was taken back to the participants to assure accuracy of their views and therefore contributing to the study's credibility. Data was analyzed using thematic analysis and began with reading the first transcript immediately after the focus groups had taken place a step supported by Padgett (1998). Analysis was carried out and performed manually. In order to help manage the process of data analysis, a data management procedure was created by creating electronic folders for all data collected.

Ethical Requirements

In order to protect African participants, the study adhered to the requirements of Virginia Commonwealth University's Institutional Review Board (VCU/IRB) in both participant recruitment and securing their informed consents. Approval of the study by the VCU/IRB assured that ethical considerations had been addressed in the study's methodology. Before each focus group, each participant understood the nature of the study and the potential risks and benefits. Participants were informed that they were free to leave the study at any time if they chose to do so. Further, they were informed that, in view of confidentiality and as way of protecting their identities, pseudonyms would be used when analyzing the data. They were also informed that they could be contacted after the

focus groups in order to assure accuracy of their views, and to get further information or clarifications. All participants read and signed consent forms and were provided copies for their records.

In the following section results of the study are presented using the three main themes in context of what participants were saying.

Results

Results are presented in the order presented by data units in the table that follow. A data unit is an approach that uses numbers and has been

supported by Miles and Huberman (1994) as useful in qualitative studies. Three themes namely feasibility, content and, quality with corresponding elements emerged for possible transferability to Zambia. The following tables one, two and three show data unit distributions for the three themes. The tables provide an understanding of what Africans consider as being important programmatic elements for supporting CHHs in Zambia. Data was broken down by gender because two different focus groups were held for African men and women. The following table one shows distribution of data units in the feasibility theme.

Table 1: Data Unit Distribution in the Feasibility Theme

| Category | Stakeholder | Data units | Percentages of total data units |
|-------------------------|-------------|------------|---------------------------------|
| Funding | Men | 72 | 15.4 |
| | Women | 51 | 10.9 |
| Finding suitable staff | Men | 62 | 13.3 |
| | Women | 35 | 7.5 |
| Staff training | Men | 56 | 11.9 |
| | Women | 28 | 5.9 |
| Supportive staff | Men | 43 | 9.2 |
| | Women | 34 | 7.3 |
| Sensitizing the public | Men | 25 | 5.3 |
| | Women | 17 | 3.6 |
| Agency collaboration | Men | 16 | 5.6 |
| | Women | 8 | 3.9 |
| Relationship with staff | Men | 10 | 2.1 |
| | Women | 10 | 2.1 |
| Total | | 467 | 100.0 |

Feasibility: Funding, finding suitable staff, staff training, supportive staff, sensitizing the public, agency collaboration and relationship with staff emerged as being important for programming. For example one participant mentioned that; “In order to protect organizations from giving out bad services, we should have central funding for all the programs in the area so that you know exactly who is doing what and how much is being spent on the different

programs.” Another participant emphasized finding suitable staff and mentioned that some of the people that want to work with young people “don’t have the interest or the desire to serve the needs of young men.” One participant highlighted the importance of “providing training which improves staff competence through meeting the needs of children.”

The following table two shows distribution of data units in the content theme.

Table 2: Data Unit Distribution in the Content Theme

| Category | Stakeholder | Data units | Percentages of total data units |
|-----------------------------|-------------|------------|---------------------------------|
| Education | Men | 57 | 15.3 |
| | Women | 42 | 11.3 |
| Skill Development | Men | 46 | 12.3 |
| | Women | 45 | 12.1 |
| Preparedness for employment | Men | 38 | 10.1 |
| | Women | 27 | 7.2 |
| Social skills | Men | 36 | 9.7 |
| | Women | 19 | 5.1 |
| Maintenance of health | Men | 25 | 6.7 |
| | Women | 0 | 0.0 |
| Civic education | Men | 23 | 6.2 |
| | Women | 15 | 4.0 |
| Spirituality | Men | 0 | 0.0 |
| | Women | 0 | 0.0 |
| Total | | 373 | 100.0 |

Content: Education, skill development, preparedness for employment, social skills, maintenance of health, and civic education are crucial elements for programming. African men only provided input on maintenance of health. One participant said that, in Africa, education was “highly regarded and many people, especially those who want to escape poverty, look at education as the solution to their problems.” Another stressed that “those young people who aspire to live well strive by all means to get at least the minimum education.” One participant indicated that “in my country, education has contributed a lot to improving the lot of the foster children and the orphans. It enlightens them to know their rights and then it enables them to be able to further their careers and have a better life.”

The following table three shows distribution of data units in the quality theme.

Quality: Community involvement, use of extended family, involvement in decisions, consideration of age, targeted services, collaboration with youth and, tracking are elements that are important for CHHs programming in Zambia. For example three men observed that “community involvement was central to African culture.” One regarded this category as “an important avenue for letting young people learn about the values of African culture and embrace the deep sense of community and connectedness embedded in African culture.” Two women shared similar views. For example, one said that “community-based initiatives need to be promoted to engage young people in order to enable them to exploit opportunities within communities.” She highlighted that “in Africa, community involvement is a component of culture that facilitates strong relationships with the community.”

Table 3: Data Unit Distribution in the Quality Theme

| Category | Stakeholder | Data units | Percentages of total data units |
|--------------------------|-------------|------------|---------------------------------|
| Community involvement | Men | 39 | 14.0 |
| | Women | 31 | 11.1 |
| Use of extended family | Men | 25 | 9.0 |
| | Women | 24 | 8.6 |
| Involvement in decisions | Men | 21 | 8.0 |
| | Women | 19 | 6.8 |
| Consideration of age | Men | 18 | 6.5 |
| | Women | 26 | 9.3 |
| Targeted services | Men | 14 | 5.0 |
| | Women | 16 | 5.8 |
| Collaboration with youth | Men | 13 | 4.7 |
| | Women | 11 | 4.0 |
| Tracking | Men | 10 | 3.6 |
| | Women | 11 | 4.0 |
| Total | | 278 | 100.0 |

Discussion

Feasibility

Increasing Funding for Services Supporting Adolescents

In order to develop any program support for CHHs in Zambia and, to allow these programs to function at desirable levels, funding is vital. A weak funding base limits the viability and ability of any program to function at optimal capacity. Weak funding affects the delivery of services to vulnerable children as well. Kwofie (2003), Collins (2001) including Subbarao and Coury (2004) share a similar position and concluded in their studies that most programs in Africa fail to function effectively because they have none or minimum, weak funding sources. A weak funding base can have a negative impact on staff training.

Staff Training

Practice with CHHs requires qualified and well trained staff to assure optimum service delivery. There is need for African countries to invest in

recruiting and retaining suitable staff that can work with CHHs. Staff training might include development, retention, and capacity building. Richter (2006) found similar results in a study conducted in Malawi and pointed out that effective programming requires “levels of professional preparation and ongoing coaching and supervision that many CHHs serving organizations are not delivering” (p. 21). Having untrained and unqualified staff often leads to ineffective services and causes a high level of turnover in many programs for orphans. Agencies supporting vulnerable children in particular play a central role as they work with and for CHHs. Collaboration between agencies is crucial for CHHs.

Promoting Collaboration between Different Agencies

Agencies are key players in provision of services to CHHs. They serve a different but important role that ensures that needs of orphaned children are highlighted. Agency impact on CHHs in general

reflects to some extent the quality of their services. Lack of agency collaboration is not healthy for CHHs and when left alone could lead to a waste of resources and a duplication of services (Hess, 2002; Krift & Phiri (1998).

Content

Improving Access to Education

There is strong need for CHHs in Zambia to have access to education. Education is necessary for their success, and a lack of it can escalate poverty, crime, and homelessness. Kelly (2002) concurs with this viewpoint and has documented that education enables vulnerable children to better understand the world in which they live. There is need for program policies that ensure that CHHs are provided with an education that prepares them for future responsibilities. For Zambia in particular and Africa in general, education might help young people affected by HIV/AIDS to better understand the world. If there is need to make changes to existing educational national policy, then those changes should focus on specific educational needs of CHHs. The need for education to address issues affecting vulnerable children has been highlighted by others (UNICEF, 2009, 2001; Germann, 2003; Kopoka, 2000; Kwofie & Milimo, 2000; Mann, 2004; Ntozi, 2000; Phiri, Foster & Nzima, 2001). The need to deliver optimum health to CHHs is very important.

Strengthening Provision of Health Services

There is research evidence that suggests that vulnerable children are exposed to negative circumstances (Everett, 1995; Hess, 2002; Luzze, 2002; Mufune, 2000; Shin, 2004; UNICEF, 2000). This results in the deterioration of their health conditions evident in worsened condition of diseases such as malaria, diarrhea, and skin infections such as scabies. A lack of access to health care can lead to mental health and psychological illnesses such as depression and trauma, (Preble, 1990; Papungwe, 2001). Health care to CHHs needs to be strengthened. Children living in CHHs need to be exposed to the values of civic education.

Broadening the Base for Civic Education

The role of civic education cannot be over emphasized and, the importance of civic education for Zambian vulnerable children is

crucial. Kelly (2002) noted that, if implemented effectively, civic education has many benefits for young people. This study echoes this position and goes further by highlighting how civic education might help children in CHHs become good and responsible citizens.

Quality

Provision of Targeted Services

Targeted services are defined as those services that meet the specific skill development, educational, health, and job readiness needs of CHHs. Richter, Foster and Sherr (2006) and Lugalla and Mwambo (1999) and echoed similar views in their studies. This study extends this argument further by insisting that targeted services are central to effective CHHs programming. Related to targeted services is the need to involve young people in program functioning.

Involvement of young people in service delivery

Promoting services by involving vulnerable children is crucial. Involvement with CHHs might promote and advance welfare of CHHs. Donahue and Williamson (1999) have noted that many services for CHHs in Africa do not involve children in major programmatic processes. Consequently, vulnerable children are at risk. They are pushed to the margins of programs and have no voice to add to how programs are developed and run. Further, getting CHHs involved in running programs might enhance their leadership skills. It may lead to better results, as children identify and participate in areas they consider important to them. Equally important to the well-being of CHHs is community involvement.

Expanding Community Involvement

There is need to pay attention to the critical role community involvement might play in tackling problems of CHHs. Community involvement means the ways in which programs work with volunteers. Community involvement might also be instrumental in providing supportive care for CHHs so that they might begin to embrace values that are essential for their standing in society. These implications confirm other findings (Odhiambo, 2003; Sengendo & Nambi, 1997; Subbarao, Mattimore & Plangeman, 2001) that suggest that involving the community in work with CHHs might have a positive impact on their well-being.

Working with Extended Families

Extended families play a critical role in shaping lives of vulnerable children. It is within families—including extended families—that young people are socialized, learn norms and, embrace values essential for their development.

Williamson (2003), Lule, Seifman and David (2009) extend the discussion further and posit that extended families provide necessary parameters in which vulnerable children might develop into responsible citizens. This viewpoint is important and calls for need to share common consensus on the centrality of the extended family in providing care and support to CHHs.

Conclusion

This study has highlighted important lessons that are critical for developing programs to support CHHs in Zambia as well as other countries within the region. The problem of CHHs is one that requires immediate attention. Children growing up in these structures have often exhibited a lot of resolve in the way they navigate daily challenges. However, a lot more needs to be done in term of designing and providing appropriate programs and services that would enhance the wellbeing of CHHs.

Current services, as discussed previously, have not done enough to improve the livelihood of CHHs. One challenge facing services is a lack of programmatic useful elements that have potential to change lives of CHHs. The findings of this study discussed above corroborate this view point and highlight the need for better programs.

In order for programs to have desired outcomes it is important to collaborate with other relevant players. Doing this might create an environment that promotes effective collaboration and networking. What program is implemented in Zambia might yield useful lessons for other countries within the region. Giving due consideration to these lessons might provide clear guidance in developing and implementing programs that have potential to positively impact CHHs affected by HIV/AIDS in an African context. The onus is therefore on programmers, policy makers, practitioners, administrators, and relevant others to work together and provide effective services to CHHs.

Limitations of Study

They were limitations to this study. First, the sample utilized in the study was very small and did not include children living in CHHs. Not having vulnerable children in the sample limited their voices which might have made important contributions to this study. Given the cultural similarities between many African countries lessons drawn from this study, as previously mentioned, might be transferable and replicated in other African countries where the scope and gravity of CHHs is high. In the future research that specifically focuses on orphaned children living in CHHs is needed. This research should explore perceptions of children living in CHHs vis-à-vis the types of programs supporting them. Further, more research is needed to assess the extent and impact of programmatic services on the functionality of CHHs. Research is also needed to evaluate the impact of elements such as education, community involvement, extended family support, agency collaboration and, health on the well-being of CHHs as these emerged as part of the critical areas of CHHs welfare.

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THE EXPERIENCES OF AFRICAN ELDERLY WOMEN AS CAREGIVERS OF THEIR ADULT CHILDREN WITH AIDS RELATED ILLNESS

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Abstract

Background: In South Africa, AIDS patients are increasingly cared for at home by women in their traditional role of family caregiver. The number of parents assuming care for their adult children infected with HIV and with AIDS related illness is increasing and this affects parents negatively. The purpose of this phenomenological qualitative study was to capture the lived experiences of African elderly women as caregivers in the challenging context of family members who are receiving antiretroviral therapy.

Methods: Using Van Manen's method for hermeneutical phenomenological research, the lived experiences of 10 African elderly women who were the primary caregivers for their HIV-positive adult children were investigated. In-depth interviews were employed as the method of data collection and in order to facilitate this process, an interview guide was developed. Transcription and analysis of the interviews began immediately following the first interview and was preceded by analyzing the transcribed interviews, line by line, highlighting important ideas and themes. Each theme was coded and recoded using Ethnographic computer program

Results: Carers struggled with the physical impact of this disease; there was a clear nexus between the carer's coping capacity and the PLWHA's physical health. As the PLWHA's health declined carers' coping skills were put to the test and new boundaries set. While carers were often 'forced' into silence by the PLWHA, there was a demonstrated desire throughout the research process for these carers to 'debrief' and discuss their past or current care. Of the caregiving, personal care was most difficult and household tasks were most time consuming. Family life, with friends was areas most likely to be affected by caregiving.

Conclusions: While it may seem that the carers are coping with care of their children with AIDS, the outer façade is not always an accurate portrayal of the true situation. Health care workers should enquire as to the assistance these carers need from the social and health care services in order to continue to care for their children having AIDS related illness.

Keywords: Family; caregiver; person living with HIV/AIDS; experiences, Gugulethu.

Background to investigation

AIDS is no longer a death sentence. Current health challenges related to HIV/AIDS have changed markedly since the use of the newer medications called protease inhibitors. The combination of the newer and older drugs used to treat HIV called highly active antiretroviral therapy (HAART), has changed HIV/AIDS from a fatal illness to a chronic, but manageable condition (Thompson, 2004). According to Pujol (2006), at the end of 1995, there were only six antiretroviral medications; however, by the close of 2005, there were 28 HIV medications. Consequent to these medications entering the picture around 1996, the estimated number of deaths in the first two quarters of 1996

was 12 percent less than the estimated number of deaths during the first two quarters of 1995 (Wheeler & Shernoff, 1999). Thus, since 1996, HIV/AIDS changed from a terminal illness to a chronic and potentially manageable one. The caregiver role has changed also as physical and emotional preparation for the death of a loved one are no longer routine. Today, the focus and overall experience of informal caregiving have shifted, and there is a dearth of contemporary research on the experience and rewards of informal caregiving. This study examined the experience, including challenges, and rewards of informal caregiving specific to African elderly women caring for their adult children with AIDS.

Methods

Hermeneutic phenomenology is an appropriate method for this research, enabling the phenomena of life's experience to be structurally and systematically analysed, thereby allowing in-depth interpretation of these lived experiences. The purpose of this form of research '...is to act as an advocate in progressing human life, by increasing its thoughtfulness and sensitivity to situations' (van Manen, 1990, p. 21). The study adopted a qualitative research approach. Within this approach a phenomenological orientation was accepted since the objectives were to explore subjective meanings and experiences from the respondent's points of view.

Setting and participants

The sample was homogenous in that all the participants were African Xhosa-speaking elderly women who were taking care of a person living with HIV/AIDS and living in Gugulethu Township. The elderly women were from similar socio-cultural contexts. Participants were caregivers at the time of the study and had relatives that have been patients at Gugulethu HIV/AIDS Clinic at some stage during their HIV illness. All participants were above the age of 57 years, had been involved in taking care of a relative living with HIV/AIDS and had shared the same household with their loved one throughout the care giving experience. Five participants had relocated from their permanent place of residence to engage in care giving. All caregivers had anticipated and desired that their loved one die at home.

A non-probability sampling technique was applied to gain a purposive sample. Ten respondents from Gugulethu ARV Clinic were selected from information obtained on antiretroviral (ARV) register in Gugulethu ARV Hannan treatment Centre. These individuals were identified for their potential to elicit valuable information regarding the effects of HIV/AIDS according to four criteria:

- Taking care of a person living with HIV/AIDS
- Above the age of 57 years
- African elderly women living in Gugulethu Township at time of the study
- Women from the age of 57 who were willing to be interviewed by the researcher about the phenomenon and participate in a follow-up interview.

Data collection

Data was collected by structured, in-depth, face-to-face interviews. Interviews lasted from 45-90 minutes. Observational field notes (Lincoln and Guba, 1985; Boyd, 1993) and theoretical memos and diagrams (Strauss and Corbin, 1990) were also used during data collection to ensure a more accurate and thorough recollection of the circumstances surrounding the interview and participants' experience. Interviews were conducted at the site of the Church where the support group was conducted. The researcher conducted all interviews personally, which enabled him to change the wording of questions while maintaining the intended meaning of the question in those instances where participants did not understand the original wording. The researcher taped the interviews after seeking consent from the participants (when permission was granted) and also took written field notes to maximise the accuracy of the recording of the responses. Two interviews were conducted to verify the first views of the participants.

Data analysis

To analyse the data generated by the in-depth interviews, the data were audio-taped, transcribed, and subjected to qualitative data analysis. Transcription and analysis of the interviews began immediately following the first interview and was preceded by analyzing the transcribed interviews, line by line, highlighting important ideas and themes. Each theme was coded and recoded using and Ethnographic computer program (Siegel, Lune, & Meyer, 1998). Codes were then grouped together and sorted into categories. To ensure credibility of the data, follow-up interviews were conducted with the ten participants, and all participants were sent a summary of the analysis. Participants were asked to comment on the truth of the descriptions and impressions derived from the interviews in order to verify the validity of the data analysis.

Ethical consideration

A study of people affected and infected with HIV/AIDS needs to be approached with great sensitivity. The stigma of HIV is such that HIV positive interviewees may fear discrimination, rejection or even violence if their HIV status is revealed. Research on HIV explores the most intimate sphere of a person's private, sexual and

emotional life. An interview can become a difficult and emotional experience, regardless of how well a person seems to be coping. Morse and Richards (2002: 205) identify the following ethical principles regarding participants' rights:

- The right to be informed of the purpose of the study as well as what is expected during the research process. The amount of participation and time required. What information will be obtained and who will have access to it. Finally what the information will be used for.
- The right to confidentiality and anonymity.
- The right to ask questions of the researcher.
- The right to refuse to answer questions the researcher may ask, without negative ramifications.
- The right to withdraw from the study at any time without negative ramifications.

Results (All names are pseudonyms)

Caregiving is overwhelming

Caregivers described the work of HIV/AIDS caregiving as overwhelming and time consuming. Caring for the ill person with HIV/AIDS becomes overwhelming when a PLWA is seriously ill and experiences the deterioration of physical and mental health, and the work load for the caregivers increases. About half of the caregivers indicated that they felt overwhelmed when they were providing care for their beloved family members. Some examples of the caregivers' experiences that produced feelings of being overwhelmed are presented:

A 67-year-old female caregiver (Mrs Nathi's story) who cared for her older son (Puleng; 45 years old) explained:

"I took care of his activities of daily living such as eating, bathing, and eliminating. He had diarrhoea 10 times each day. No one helped me when he was dependent and needed care. I had one sister, but she worked outside. I am too old to help him take care of himself and I have my own severe illnesses, too. I spent all of my time trying to take care of him. Sometimes I felt so tired and I could not sleep well. During that time, I tell you the truth..., I felt fatigue and like I was suffering." (Case #1).

Caregiving Difficulties

During the course of care, some caregivers described their experiences of caregiving difficulties

when they had to deal with emotional changes of PLWAs, and manage the severe symptoms of PLWAs, and attend to other household jobs as well. Two caregivers stated that they could not manage the situations when the PLWAs had emotional distress and they worried about whom they could ask for help if needed.

A 57 year-old female caregiver (Mrs Bonke's story) who cared for her daughter (34 years old) had this to say.

"She used to be a talkative and easy going person. She had lots of friends. But now (after she was diagnosed with the disease and became symptomatic), she changed her personality and separated herself from others. She did not want to contact her friends. When her friends called, she refused to talk to them. I felt worried about her; she used to say that she wanted to die. It was hard for me to take care of her." (Case #7)

Seeking Knowledge about HIV/AIDS

All caregivers had learned about the nature of HIV/AIDS and factors affecting health and the disease progression of PLWAs. They utilized several methods to learn about the disease. A 60 year-old female caregiver (Mrs Wongani's story who was HIV positive) who cared for her son, Wanini (32 years old) sought knowledge in the following manner.

"At first, I did not know about the AIDS disease. I did not pay attention to it because I thought I would not be close to the disease. Then, I was frightened when I learned that my son was HIV positive. Finally, I also learned that I was HIV positive... Now, I think a lot. I had to search for more information about the disease to get to know how it affected a person's health. Now I know, if I take good care of myself, I can live longer. Right now, I am fine, my health is okay. I took care of my son during the time he stayed at home." (Case #4)

When caregivers learned that they had to take care of their loved ones with HIV/AIDS, they needed to know about the disease so that they could provide proper care for the ill family members, and how to take good care of themselves. A 65-year-old female caregiver (Mrs Moni's story) who cared for her 2nd son (26 years old) made this observation.

"I searched for information about HIV/AIDS disease from books, magazines, and from health care providers. Who never told me that I could find good medicines such as herbs and vitamins; I would go and buy them. Then I would give the medicines to my son with the hope that he would get well soon." (Case #5)

Encouraging the PLWAs to be Strong and Positive in Mind

Kinser (2002) stated that positive attitudes and emotions could affect the biochemistry of the body and help to enable the personal healing process by increasing the person's capacity to manage the illness, improving their physical condition, and helping them to achieve a sense of well-being. When assisting PLWAs, it is important to alleviate negative experiences, and prevent situations and events that could trigger the sense of despair and hopelessness. In general, despair and hopelessness are associated with suffering (Kylmä, Vehviläinen-Julkunen, & Lähdevirta, 2000; Lindholm & Eriksson, 1993). On the other hand, hope helps with healing and provides the sick person with a positive outlook on the future. Six of the 10 caregivers specifically mentioned that their loved ones wanted emotional and spiritual support with the positive message of hope. The caregivers' thoughts about emotional and spiritual support are illuminated.

A 67 year-old female caregiver (Nathi's story) who cared for her older son (45 years old) shared these thoughts.

"I gave him supportive words. For example, I said, do not think about the disease too much because it makes you feel stress and stress is not good for your health." (Case #1) *"I encouraged him to pray in order to keep his mind calm and to distract his thoughts from the illness."* (Case #1)

A 64-year-old female caregiver (Mrs Phethani's story) who cared for his youngest daughter (25 years old) also shared her thoughts.

"During the time her condition was deteriorating, I thought that emotional support was essential for her. It was my business to cheer my daughter up. I stayed with her; I served her good nutrition and vitamins. I advised her to just relax and do not become

discouraged. All of these things are helpful for her health and her improvement. I was happy when I saw her health was better." (Case #3)

Personal Care: Helping with Activities of Daily Living

Caregivers shared descriptions of the personal care that they provided: activities of daily living included assistance with eating, bathing, and toileting.

A 67 year-old female caregiver (Mrs Nathi's story) who cared for her older son (45 years old) shared these sentiments with the researcher.

"I cooked for everyone in my family. We ate together and that included Puleng, my son with the disease. My son had low immunity and was susceptible to opportunistic infections. The food must be fresh and clean... I was afraid that he might not receive enough nutrition, so I gave him supplemental food products such as chocolate milk or soy milk." (Case #1)

"When his health was getting worse, he could not go to the toilet himself, and I served him with a bedpan. Then I had to clean him up after he defecated." (Case #5, Mon's story)

Medical Care

This category included a variety of caregiving activities, such as preparing medications, and managing follow-up treatments and appointments. Caregivers dispensed medications according to the physicians' prescriptions.

"The medicine that the physician prescribed for him when he had fever well; I gave it to him when he needed it." (Case #2, Mrs Lulama's story) *"I reminded her to take her medicine on time because sometimes she forgot."* (Case #3, Mrs Phethani's story)

Caregivers helped with arrangements for follow-up treatments when their loved ones had abnormal signs and symptoms such as fever, headache, diarrhoea, nausea, and vomiting.

"His health was very bad. I was worried about him. When I observed his abnormal signs, I did not hesitate to bring him to see the doctor." (Case #1, Mrs Nathi's story)

In addition, some PLWAs required medical interventions such as tube feeding and wound

dressing. Caregivers said that they provided those treatments and learned to do them correctly. They also had to learn about managing abnormal signs and symptoms.

A 65 year-old female caregiver (Mrs Nozizwe' story) who cared for her daughter (28 years old) explained how she managed the interventions.

"My daughter was very sick. She could not eat by herself. The physician inserted the nasogastric tube in her stomach. I learned how to blend food and how to feed my daughter. I also monitored the amount of food she ate. During some meals I had to add more food this happened when I observed that she could eat more." (Case #9)

A 67-year-old female caregiver (Mrs Nathi's story) who cared for her older son (45 years old) monitored him closely and with care.

"He had a mouth ulcer and white plaque on the tongue. He felt pain when he would try to eat. So I cooked soft diets such as noodles, soup, or boiled rice for him." (Case #1) *"He passed runny stools about 10 times a day. I served him a bed pan and cleaned his body after elimination. Later, I bought pampers and used them. They were easier to use, but more expensive. His bodily discharges were kept separately from other items, placed in a plastic bag, and put in the garbage."* (Case #1)

Tender loving care.

Tender loving care was evident among the caregivers in this study. All caregivers tried to provide their family members with love and support. They helped their ill family members through showing them compassion; they also tried to find the beneficial ways to alleviate their loved ones' suffering.

"The first time I knew that both of us were HIV positive, I was frightened. I thought that was impossible. But we did not make an argument out of this situation. We tried to give support to each other. Even though we knew that there was no cure, we could live longer if we could provide good self care for ourselves, and be careful with our health habits. Above of all, I loved my son very much." (Case #4, Mrs Wongani's story)

Helping the PLWAs to relax and enabling the practice of religious beliefs.

Caregivers helped PLWAs to relax and allowed them to participate in activities as usual, when possible. Activities such as watching television, exercising, praying, and meditations were some of the activities that seemed to help the ill family members.

A 67 year-old female caregiver (Mrs Nathi's story) who cared for her older son (45 years old) participated in some activities that she thought helped her son.

"I and my son went to the church to listen to the word of God because we believed that the word of God would help my son to relax and feel calm. This relaxation might help to strengthen his immune system. At night, I encouraged my son to pray in order to keep his mind calm." (Case #1)

In conclusion, caregivers of PLWAs provided assistance to their ill family members. They helped with personal care, including aiding them with eating, bathing, and eliminating activities. They also managed their ill family members' medical care and interventions. Moreover, caregivers engaged in providing emotional and spiritual support to their loved ones in order to help them remain hopeful and strong.

Discussion

Suffering has been referred to as a human state of anguish because of bearing pain, injury, or loss (Copp, 1974). Suffering also refers to the negative experience in caregiving or any threat to personal integrity (Poulshock & Deimling, 1984). The word suffering in African philosophy is related to sickness, negative feelings, and the association with what is unpleasant (Sutthiyano, 1999). In this study, caregivers experienced suffering when they felt overwhelmed and difficulties in caring for PLWAs. Caregivers described the tasks and responsibilities of a caregiver as overwhelming and difficult. This finding was consistent with earlier studies that indicated that the demands of caregiving of PLWAs were overwhelming (Brown et al., 1995; Phengjard et al., 2002; Kipp et al., 2007). The demands of caregiving for PLWAs increase as the disease progresses (Pearlin et al., 1997). In studying family caregiving experiences of providing

care at home for dying loved ones with HIV/AIDS, Stajduhar (1998, p. 17) found that caregivers described their work of HIV/AIDS caregiving as a "cycle", "responsibility", "overwhelming", "ongoing", and "never ending."

Consistent with similar international studies, Kipp and colleagues (2006a) found that almost all caregivers of spouses with HIV/AIDS in Bumbu, Kinshasa, Democratic Republic of Congo reported that providing care for PLWAs was difficult and stressful. In addition, Casida (2005) and Luttik and colleagues (2007) found that caregivers had to perform caregiving tasks, which were associated with feelings of burdens and being overwhelmed, particularly when the tasks involved personal care and activities of daily living.

However, the participants also offered a supportive role, in the form of seeking knowledge about HIV/AIDS and encouraging the PLWAs to be strong and positive in mind. This is similar to the study by Stetz and Brown (1997), who reported that one strategy for taking care of persons with cancer and AIDS emerged was seeking and obtaining information. These strategies involved finding information about the disease and referral resources. These caregivers and the ill persons needed to understand the disease in order for the caregivers to provide better care for the ill persons (Stetz & Brown, 1997). This current research revealed that although the caregivers faced the uncertainty of the disease progression and the impending death of the PLWAs that could take place at any time, they still maintained hope. They did not ignore the PLWAs' needs and they gave them supportive words of encouragement. For example, they offered sufficient food and medications with the hope that the PLWAs would recover or attain better health. This finding was consistent with the previous reports about PLWAs caregivers. Baker (2003), Kespichayatana and VanLandingham (2003), McCann and Wadsworth (1992), Saengtienchai and Knodel (2001), and Wardlaw (1994) reported that the majority of caregivers provided emotional support and comfort to the PLWAs.

Conclusion

The area of HIV/AIDS provides a challenge to address both the physical and sociological aspects

of clients and other individuals important to the client. This research has focused upon carers. I chose this area as carers' voices are often not heard by health-care professionals. While the findings clearly explored the lived experiences of the carers who took part, health care professionals need to be aware there are other people, not just the ill client who are affected by HIV/AIDS. This article highlights the carers' daily struggle to provide help and assistance to their loved ones living with HIV/AIDS, thus giving insights to health care professionals about what assistance they could offer carers to assist ill clients.

Exploring how these carers cared for someone living with HIV/AIDS also highlighted their relationships with their communities. This is an area neglected by many researchers because many researchers choose to focus upon the pathology of HIV/AIDS. There has been an overall lack of focus upon the sociological effects of this illness on the caregiver. The research identified compassionate, intimate and caring relationships that were challenged by HIV/AIDS, yet the elderly women made a conscious decision to care for their infected adult children. This conscious decision often meant the carer witnessed the decline of their children's health, often to eventual death.

Implications for research

This study illustrates the need for further research into the development and implementation of support programmes for the caregivers, as well as further research regarding the reduction of stigma surrounding HIV/AIDS.

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Outcome measures used to assess disability post stroke within the framework of the ICF: A Literature Review

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Abstract

Background: The use of outcome measures has been associated with good practice among clinicians and as a research instrument. These measures can be utilized to assess- and manage patients, observe progress, determine the effects of certain intervention and for research purposes. This scholarly paper investigates the most commonly used outcome measures along the continuum of care, and further provides additional information that will assist researchers and clinicians to decide on the most appropriate outcome measure in a South African Healthcare.

Methods: Literature of the past 10 years dealing with outcome measures was reviewed for this study. The types of papers in this review were systematic reviews, narrative reviews, scholarly papers, longitudinal and cross sectional.

Results and Discussion: Included in this review are four impairment, five activity/disability, two participation restriction and four quality of life outcome measures. Although a number of these measures have been used in the South African setting, it is not clear whether they have been validated for the local context. Few translated versions relevant to South Africa are available and not all measures are freely available, which could limit the use thereof.

Conclusion: This paper successfully describes the commonly used outcome measures and aspects that should be taken into account when deciding on the appropriate measure.

Key Words: Outcome measures, rehabilitation, impairment, activity limitation and participation restriction.

Introduction

Stroke is considered as one of the leading causes of death worldwide. In addition to the high mortality rate, the physical consequences of stroke are highly disabling, which negatively affects the quality of life of stroke survivors (Murray & Lopez, 1997). Rehabilitation is the process used to address the post-stroke consequences.

To determine the effects of rehabilitation, outcomes need to be measured. Standard practice for stroke outcome assessments is often limited to measuring the resulting neurological impairment and functional activity and participation, thus neglecting to evaluate the total influence of the stroke on a

patient's well-being (Nichols-Larsen, Clark, Zeringue & Blanton, 2005). On an individual basis, post-stroke outcomes are heterogeneous due to various factors. Some of the factors include the extent and severity of the stroke, personal attributes and health services received. Hence, when measuring outcomes it is important to take these factors into account. In addition outcome measures are important to determine the effects of interventions, quantify patients' progress, prognosticate future outcomes and estimate health costs (Haigh et al., 2001; Tennant, 2000).

Over the past three decades, predominantly in the field of physical rehabilitation, numerous outcome

measures have been developed by researchers (Cohen & Marino, 2000) and clinicians. Self-reporting has been used to measure functional status, psychological well-being, and quality of life (Mchorney, 1997). Measuring outcomes is central, as most of the stroke survivors regard daily activities and participation in their home environment and community as the ultimate goals of rehabilitation (Schepers, Ketelaar, Van De Port, Visser-Meily & Lindeman, 2007). Outcome measures designed for stroke survivors can be conceptualized and categorised using the International Classification of Functioning, Disability and Health (ICF), depending on the underlying constructs that the items cover. The ICF consists of two domains.

The first domain includes the consequences of the health condition, which could result in a dysfunction in impairments, activities and participation in social roles. The second domain includes environmental- and personal factors that could influence an individual's level of functioning and recovery within the categories of the first domain (WHO, 2001). It is not uncommon for one outcome measure to fall within two or more categories of the first domain of the ICF (Schepers et al., 2007). The study conducted by Schepers et al. (2007) evaluated the content and relationship of widely used outcome measures to the categories of the ICF framework, and found that numerous items contained in the outcome measure overlap different domains. Therefore, researchers and clinicians should evaluate the content of the outcome measures, in order to decide whether the tool measures the desired constructs one wishes to study and also identify the shortcomings of the tool.

Literature has often reported on the psychometric properties of outcome measures. The challenge that is often not addressed in literature but is applicable in the South African context, is the means of administration and time taken to complete the items, the appropriate language and rules for translation, cost of outcome measures or licensing and copyright. The purpose of this article is thus to address some of the challenges highlighted above and provide clinicians and researchers in South Africa with information that could assist them in choosing the appropriate outcome measure for patients with stroke.

Method

To identify the most recent commonly used outcome measures in stroke publications, which investigated outcomes of patients with stroke as well as outcome measures used in this field, were reviewed. The literature search was done using CINAHL and Pubmed/Medline databases. Systematic –and scholarly (peer- and refereed reviewed) articles published from January 2000 to May 2010 were included in this review. In addition, observational and intervention studies were also included. Hand searches were done for relevant literature identified from the reference lists of sourced articles and books written by experts in the field of stroke rehabilitation. After the identification of outcome measures from the literature search, various search engines e.g. “google” was utilized to gather more information on the tools. The following key terms were used to retrieve relevant literature from the respective databases, “outcome measures”, “impairment outcome measures”, “functional/disability outcome measures”, “participation outcome measures”, “quality of life measures”, “rehabilitation” and “stroke rehabilitation”. Following identification of the most widely used outcome measures, key aspects were captured on a data gathering sheet. The data sheet captured information pertaining to the proprietary name of the outcome measure, the psychometric properties (reliability, validity and responsiveness), the aim and limitations of the outcome measures, whether or not the outcome measure has been used in a South African based study, the means of administration, the availability of translated versions of the outcome measure, whether permission is needed or not to use the outcome measures, and costs involvement. Information recorded was reviewed by both authors.

Results and Discussion

After the completion of the literature search, a number of widely used outcome measures have been collated and categorized according to the International Classification of Functioning, Disability and Health (ICF). Outcome measures were classified and sorted into the distinct domains of the ICF, which are impairment, activity limitation and participation restriction. In addition to outcome measures classified in the above categories of the ICF, widely used quality of life measures were also identified and included in this study. There was a

great need to identify eligible outcome measures and to provide evidence of its psychometric properties, means of administration, time taken to complete the items and the availability. Current practice for monitoring outcomes in terminally ill patients in South Africa relies on the use of subjective (invalidated) measures, cumbersome note writing into the medical file, and the use of clinicians' recall of previous functional- and health status (Harding, Dinat & Sebuyira, 2007). Various factors contribute to the lack of utilisation of outcome measures by health professionals in

South Africa. Some of the factors reported by Inglis, Faure & Frieg (2008) are lack of awareness-, knowledge- and training on the use of existing standardised outcome measures, time constraints and lack of finance for purchasing license and cost of translations, if needed.

A summary of the most commonly used impairment (Table 1), activity limitation (Table 2) and participation (Table 3) outcome measures utilized in South Africa, is summarized below.

Table 1. Most commonly used outcome measures at the level of impairment.

| Outcome measures | Aim | Limitations | Reliability and validity | Responsiveness to change | Use of the outcome tool in S.A | Means of Administration, training required and time needed for completion | Translations available | Permission or cost attached to use of the outcome measure |
|-------------------------------|---|--|--|--|--|---|--|---|
| NHSS | To determine cognitive, motor and sensory impairment. (Good predictor of recovery at 3 months) | Muir, Weir, Murray, Povey & Lees (1996) suggested a shortcoming of the NIHSS is that many scale items cannot be tested in patients with very severe stroke; there may be a ceiling effect | Inter-rater reliability (ICC: 0.69) Intra-rater reliability (ICC: 0.93) (Goldstein and Samsa, 1997) Adequate concurrent validity with the Barthel Index (Saver, Johnson & Homer, 1999). Excellent predictive validity (Lyden et al., 1999). Confirmed content validity (Lyden et al., 1999). | The outcome measure is responsive to change (Brott et al., 1989) | Yes (Cronje, Duim, Marroni & Cali-Corleo, 2006). | Direct observation: 5-10 minutes | Italiano Portuguese Español Deutsch Français Pycckko Bulgarian Czech Flemish Romanian | No permission required. |
| Modified Ashworth Scale (MAS) | The MAS determine the amount of resistance or tone perceived by an examiner when moving a limb. | The validity of the outcome measure is still questionable, as it appears to test only an aspect of spasticity. It is currently viewed as a rating scale to detect abnormality in tone. Subjective nature of the rating scale is also criticized. | Inter-observer reliability (Kappa-coefficients: $k=0.63-0.81$). Gregson et al. (1999) estimated the intra-rater reliability, as calculated using weighted kappa was excellent (weighted kappa = 0.83). Poor content and concurrent validity | No studies have examined the responsiveness of the MAS | Yes (Chait, Aguiar, Theron & Bleloch, 2002). | Direct observation: No training is required, but preferably performed by a PT or OT. Time to complete depends on the number of muscle groups to test. | English | No permission is required. |

Table 2. Most commonly used outcome measures for activity limitations (Disability)

| Outcome measures | Aim | Limitations | Reliability and validity | Responsiveness to change | Use of outcome tool in S.A | Means of Administration | Translations available | Permission or cost attached to use of the outcome measure |
|------------------|---|---|--|---|---|--|---|---|
| Barthel Index | This tool measures the level independence performing functional activities: It includes basic mobility, self-care activities and an assessment of bladder and bowel continence. | Limited range of disability within which it is able to detect change as evidenced by significant ceiling effects (7%) | Test-retest reliability coefficients $r=0.98$ The inter-rater reliability of the BI using weighted kappa ranged from 0.53 (adequate) to 0.94 (excellent) (Hsueh, Lee & Hsieh, 2001). Excellent construct and criterion validity compared to SF-36 Wilkinson et al., 1997). | This scale has been found to be insensitive to small changes in functional status and has a ceiling effect, therefore should be taken with caution when administered to patients suffering from mild strokes.(Duncan et al., 1997). | Yes (Puckree, Chetty, Ramlakan, Simelane & Lin, 1997) | Direct observation takes about 20 minutes or self-report, which may take 2-5minutes. Can also be completed by proxy. Administration of the BI does not require training and has been shown to be equally reliable when administered by skilled and unskilled individuals (Wade & Collin, 1988). The BI can also be self-administered (McGinnis, Seward, DeJong, & Osberg, 1986) | Afrikaans Isi-Xhosa English Dutch German Turkish French Persian Chinese | No permission is required |

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|--|--|--|--|---|--|---|---|---|
| <p>Functional independence measure (FIM)</p> | <p>This measure aims to determine motor- and cognitive function. Furthermore, it was developed to address issues of sensitivity and responsiveness which were found problematic in the Barthel Index</p> | <p>Certain items shown low responsiveness, especially the cognitive category. Poor-moderate ceiling effects were reported.</p> | <p>Inter-observer reliability of 0.95 and test-retest reliability of 0.95 Concurrent validity: showed strong association with BI (r=0.74 admission) (r=0.92 discharge) (Hobart & Thompson, 2001). Content and face validity determined by a Delphi panel (experts in the field of outcome rehabilitation).</p> | <p>The motor items of the FIM demonstrate high responsiveness to change, similarly to the Barthel Index. Certain items reported low responsiveness to change (Hobart & Thompson, 2001).</p> | <p>No-published articles or books were retrieved from data-bases. One study reported via personal communication (J.A. Hendry, personal communication, July 14 2010).</p> | <p>Administration by direct observation, by someone who has received certified training. Administration time= 30-45 minutes.</p> | <p>German Italian Swedish Spanish Finnish Portuguese Afrikaans Turkish French</p> | <p>Licensing is mandatory for the use of the FIM. Significant purchasing costs.</p> |
| <p>Frenchay activities index</p> | <p>This is a measure of instrumental activities of daily living, which provides an assessment of a broad range of activities associated with everyday life</p> | <p>Gender may have some influence on FAI scores, therefore recommended that male and female scores be considered separately. Bias also apparent with the use of proxies.</p> | <p>Test-retest demonstrated an ICC of 0.79 (Miller, Deathe & Harris, 2004). Inter-rater reliability of ICC: 0.90 (Post and de Witte 2003). Excellent concurrent validity when compared to the Barthel Index and FIM The tool shown</p> | <p>moderate ability to detect change. Floor effects exit when administered 6 months post stroke (Wade, Legh-Smith & Langton, 1985).</p> | <p>Yes (J.A .Hendry, personal communication, July 14 2010).</p> | <p>Administered in an interview format which takes approximately 5 minutes to complete. Can be completed by a proxy. No training is needed to administer the FAI.</p> | <p>English Dutch Chinese</p> | <p>No permission is required.</p> |

| | | | | | | | | |
|-----------------------|---|--|--|--|--------------------------|--|---------------------------------------|-------------------------|
| Modified Rankin Scale | This tool measures global outcomes post-stroke, and is further used to determine prognosis post-stroke. | The arbitrary nature of the scoring system and the lack of clear criteria may diminish the reliability. Furthermore, the categories are too broad in description | Intra-rater reliability for exact agreement was calculated using Kappa: 0.95 (Wolfe, Taub, Woodrow, and Burney, 1991). Kappa coefficients for inter-rater reliability was 0.75-0.96 Excellent concurrent validity when compared to BI. Adequate to excellent construct validity when compared to the BI (Cup, Scholte op Reimer, Thijssen, & van Kuyk-Minis 2003). | Poor ability of the MRS to detect meaningful change (Dromerick, Edwards & Diringer, 2003). | Yes (Lees et al., 2000). | Administration for the scale is via a guided interview process, which takes approximately 5-15 minutes. Training and certification package for the MRS are available to improve reliability but, no formal training is required. | English German Persian Dutch | No permission required. |
|-----------------------|---|--|--|--|--------------------------|--|---------------------------------------|-------------------------|

| | | | | | | | | |
|---|---|---|--|---|--|---|------------------------------|------------------------------------|
| <p>Nottingham Extended Activities of Daily Living Scale</p> | <p>The NEADL scale measures independence in instrumental activities of daily living. These activities needed to interact with the environment and includes the household and community. These activities are broader than basic activities of daily living.</p> | <p>No reliability or sensitivity data available on the NEADL.</p> | <p>Inter-rater reliability in Multiple Sclerosis survivors was measured via ICC: 0.88 (Nicholl, Lincoln & Playford, 2002).</p> | <p>Responsiveness is poor when compared to other measures such as BI and FIM (Harwood & Ebrahim, 2002).</p> | <p>Yes (Personal commu-nication: Rhoda, unpublished thesis).</p> | <p>Means of administration is self-report. Time taken to complete is 10 minutes, and no training is required.</p> | <p>English Isi-xhosa</p> | <p>No permission is needed</p> |
|---|---|---|--|---|--|---|------------------------------|------------------------------------|

Table 3. Most commonly used outcome measures for participation restrictions (Handicap)

| Outcome measures | Aim | Limitations | Reliability and validity | Responsiveness to change | Use of outcome tool in S.A | Means of Administration | Translations available | Permission or cost attached to use of the outcome measure |
|--------------------------------------|---|---|--|---|--|---|--------------------------------------|--|
| Reintegration to Normal Living Index | This outcome measure was developed as a short and simple way to assess, quantitatively, the degree to which individuals achieve reintegration into their social background. | Low correlation has been reported between responses given by health professionals and patients, due to the subjective nature of the statements. No general expected standards are available for interpretation. | Its reliability and validity have not been well studied within this particular population. Test-retest ICC: 0.80 (Korner-Bitensky, Wood-Dauphinee, Siemiatycki, Shapiro, & Becker, 1994). Excellent content and construct validity examined. | Scale is responsive to change (Wood-Dauphinee, Opzoomer, Williams, Marchand, & Spitzer 1988). | The RNLI has been used in South Africa | Self-administer to patient or proxy, interview administered or postal. No formal training is required upon the use of the RNLI. Takes less than 10minutes to complete | English French Canadian-French | Requires no license or training to administer, and free of- charge |

| | | | | | | | | |
|------------------|---|---|--|--|--|---|--|--|
| <p>WHODAS II</p> | <p>The WHODAS II aims to measure: Understanding, communicating, getting around, self care, getting along with people, life activities and participation in society.</p> | <p>The generic origin of the WHODAS II results in strong floor effects in some conditions. The tool have some questions which do not contain meaningful concepts related to activities and participation.</p> | <p>ICC of 0.71-0.92 Good concurrent- and convergent validity demonstrated (Kutlay et al., 2009).</p> | <p>The WHODAS II have been found responsive to change, even though the significant floor effects exist (Meesters, Verhoef, Liem, Putter, & Vlie Vlieland, 2009).</p> | <p>Yes (Peltzer, Phaswana-Mafuya, 2008).</p> | <p>The tool can be self-administered, interviewed- (preferred means of completion) and completed by a proxy (relative). It takes about 8-10 minutes to complete</p> | <p>Available in 18 languages. Training material is available on request from the WHO and website. Arabic, French, Hindi, Mandarin, Spanish, Yoruba, Dutch, German, Italian, Tamil, Romanian, English, Greek, Kannada, Russian, Turkish</p> | <p>Permission needs to be obtained from the WHO, in Switzerland. Permission further needs to be granted for translations, if a researcher wishes to translate the outcome measure (WHO, 2001).</p> |
|------------------|---|---|--|--|--|---|--|--|

Table 4. Most commonly used outcome measures for quality of life (QoI)

| Outcome measures | Aim | Limitations | Reliability and validity | Responsiveness to change | Use of outcome tool in S.A | Means of Administration | Translations available | Permission or cost attached to use of the outcome measure |
|------------------|--|--|--|--|----------------------------|--|---|--|
| Short Form 36 | It is a generic health survey developed to assess health status in the general population | Higher rates of missing data have been reported among the elderly when using self report as means of administration. Therefore, postal administration may not be appropriate among the older patients. | Test-retest ICC range from 0.55-0.82 Construct validity poor-excellent (Walters, Munro, & Brazier, 2001). | Most of the studies found that the SF-36 has a large ability to detect change (Harwood & Ebrahim 2000). | Yes (Westaway, 2010). | Either form (self-completed or interviews) of administration takes less than 10 minutes to complete. Mailed questionnaires also yield reliable results and high response rate. Proxies can also be utilized in the absence of the patient. | English Spanish Chinese Japanese Vietnamese etc. available in 96 languages. | Permission needs to be obtained from the Medical Outcomes Trust who oversees the standardized administration of the SF 36. |
| EuroQol-5D | The measure was designed to obtain an indication of the level of difficulty experienced in mobility; self-care; and usual activities. It further assesses major impairment. The EQ5-D also measures the individual's perception of their current health status using a Visual Analogue Scale (VAS) | The EQ-5D has come under criticism for the brevity of its health states | Test-retest ICC 0.83 EQ-5D shows good correlation when compared to the SF-36 (Stark, Reitmair, Leidl, & König, 2009). | The measure is able to detect significant improvement and deterioration (Stark, Reitmair, Leidl, & König, 2009). | Yes (Jelsma, 2010). | Self-report, proxy or interviews modes of administration. Takes 8 minutes to complete. | English Isi-Xhosa Arabic Swedish In total 83 translated languages are available | Copyrighted by the Euroqol group. Licensing fees are determined by the Euroqol executive |

Impairment outcome measures

From the search the researchers were able to identify 18 outcome measures that were available for the assessment at the level of impairment. The most widely used impairment based measures in this review are the National Institute of Health Stroke Scale (NIHSS), Rivermead Motor Assessment (RMA), Fugl-Meyer Assessment (FMA) and the Modified Ashworth Scale (MAS). A study conducted by Haigh et al., (2001) found that the most commonly used impairment outcome measures in Europe are the NIHSS, RMA and the MAS. A recent systematic review further justified the extensive use of the NIHSS, FMA and the RMA (Quinn, Dawson, Walters & Lees, 2009).

All the identified impairment outcome measures have been used in South Africa, (Connor, Modi & Warlow, 2009) except for the FMA. The means of administration of all the impairment outcome measures is by direct observation and takes approximately 30 minutes to complete. All the impairment outcome measures are available in English, but none of the outcome measures is available in one of the other official languages in South Africa (Table 1). It is important to note that the majority of the impairment scales are completed via direct observation and therefore translations are not specifically needed. The NIHSS and the RMA are in the public domain, therefore no permission is required for the use of these outcome measures, however, the FMA and the MAS are copyrighted outcome measures that require written permission from the authors or publishing agency.

Activity limitation outcome measures

In this review, six functional activity/ disability outcome measures in stroke rehabilitation have been identified from the literature search. The most commonly used functional outcome measures are the Barthel Index (BI) and the Functional Independence Measure (FIM) (Skinner & Turner-Stokes, 2006; Turner-Stokes, 2000; Cohen & Marino, 2000), and the most widely used extended activities of daily living outcome measures are the Frenchay Activities Index (FAI) and the Nottingham Extended Activities of Daily Living Scale (NEADL) (Turner-Stokes, 2000). The most extensively used global disability outcome measure is the modified Rankin Scale (MRS). All the activity outcome measures presents with good psychometric

properties. However, the ability of BI and the MRS to detect functional change post stroke is poor (Dromerick, Edwards & Diringier, 2003; Duncan et al., 1997).

The BI, FAI, NEADL and the MRS have been previously used in South African based studies (Lees et al., 2000; Puckree et al., 1997). The use of the FIM has been reported via personal communication (J. A. Hendry, personal communication, July 14, 2010). All the activity outcome measures can be administered via face-to-face interview, which takes up to six minutes to complete, except the FIM, which requires direct observation that could take up to 45minutes to administer. All the outcome measures evaluating activities are available in English. Apart from English translation, only the BI and FIM have been translated into Afrikaans. Only the BI and the NEADL are available in Isi-xhosa (A. Rhoda, personal communication, July 20, 2010). It is important to note that the validity and reliability of the translated versions, within a South African context, have not been reported on. The BI, FAI, MRS and the NEADL can be recruited via any available source, and no permission is required to utilize the tools in clinical practice or for research purposes. The FIM is not freely available, therefore permission is needed from the copyright agency, and formal training is mandatory for administrative purposes.

Participation restriction outcome measures

The Reintegration to Normal Living Index (RNLI) and the World Health Organisation Disability Assessment Schedule II (WHODAS II) have been found the most widely used participation outcome measures in recent stroke trials. Initially five participation/handicap outcome measures have been identified from the literature. Reported evidence exists on the use of the participation outcome measures in South Africa. It is important to identify the use of the outcome measure in South Africa due to cultural diversity, therefore translation of the outcome measure is mandatory. One should be aware that when an outcome measure is translated into a different language, the translated language may express and interpret the items differently than the original version (Chang-Hoon et al., 2006; Mkoka, Vaughan, Wylie, Yelland & Jelsma, 2003).

The outcome measures can be completed through self-report, interview and the use of a proxy within eight to ten minutes. Training manuals are available for the WHODAS II. To access the WHODAS II for public use, permission is required and can be obtained from the World Health Organisation in Switzerland (WHO, 2001). When utilizing the WHODAS II, all data collected during that research project are subject to submission to the WHO. Therefore, the copyright clause of all outcome measures should be taken into account especially where researchers have received funding from research organizations.

Quality of life outcome measures

In this review six quality of life outcome measures in stroke trials have been reported on. The list consists of stroke specific-and generic quality of life outcome measures. The most widely used quality of life outcome measures in this review are the Short Form 36 (SF-36), EuroQol-5D (EQ-5D), Stroke Impact Scale (SIS) and the Nottingham Health Profile (NHP) (Salter et al., 2005). The use of the SF-36 and EQ-5D have been reported in South African based studies (Jelsma, 2010; Westaway, 2010), however, no published literature is available on the use of the SIS and the NHP in South Africa.

All four quality of life outcome measures can be administered through an interview or self report. Proxies in the form of a caregiver or treating health professional can also be used to complete the assessment. Caution should be taken when using proxies as they tend to report more dysfunction than the stroke patients themselves. The differences in reporting between the proxy and the patients may be large and can therefore impact the outcome assessment in stroke trials (Williams et al., 2006). The average time taken to complete the quality of life outcome measures is ten minutes. All the quality of life outcome measures are available in English. The EQ-5D is available in Isi-Xhosa and the SIS in Afrikaans (Table 4). The fact that the SIS is available in Afrikaans one can deduce that the outcome measure has been used in South Africa, but the study has not been published. None of the outcome measures is in the public domain and therefore permission is required from the authorities, which sometimes involves purchasing of a license.

Limitation(s)

The results of the study do not state whether translated versions of the outcome measures have been validated in the specific setting. This could have implication on the appropriateness of certain domains and dimensions of the outcome measure in the South African context.

Conclusion

This study highlighted the most widely used outcome measures within the ICF framework in stroke rehabilitation (Tables 1-4). Health professionals in South Africa can utilize the information to decide on the appropriate outcome measure. It is important as a researcher or clinician to be clear as to what category and constructs of functioning you want to measure and the feasibility of the outcome measure in terms of practicality and funding resources. Numerous outcome measures previously used in a South African context were reported via personal communication. This finding necessitates researchers to report on the outcomes and use of outcome measures through publication. This could increase the body of knowledge in various areas of stroke rehabilitation and facilitate networking and collaboration between clinicians and researchers in South Africa.

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Knowledge of undergraduate physiotherapy students in the Western Cape regarding the correct administration of bronchodilators via metered dose inhalers

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Abstract

Background: International studies have shown that there is a lack of practical and theoretical knowledge amongst various health professionals regarding the correct administration of bronchodilators via metered dose inhalers that may result in poor outcomes and negative side effects in patients. The aim was to evaluate the knowledge of undergraduate physiotherapy students in the Western Cape regarding the correct administration of bronchodilators via metered dose inhalers.

Method: A cross-sectional quantitative descriptive survey including 330 participants was conducted. Data were collected using a self-developed, self-administered English questionnaire. Analysis included descriptive and inferential statistical tests with results significant at $p \leq 0.05$.

Results: Similar to other studies significantly fewer students had the correct knowledge with regards to the correct administration of BD's via MDI's in relation to the correct steps ($p=0.000$), overdose ($p=0.000$), side effects ($p=0.000$) and contra-indications ($p=0.000$) of BD administration via MDI.

Conclusion: Teaching and learning should be directed towards improving theoretical and practical skills with regards to the correct administration of BD via MDI. Dosage, side effects and contra-indications of BD usage are aspects that also need to be emphasized in the respiratory physiotherapy curriculum. This will assist in ensuring accurate demonstration and education for safe patient administration. Regular evaluation of technical skills and theory is also recommended.

Key words: bronchodilator, metered dose inhaler, student, physiotherapy and knowledge

Introduction

Many health professionals including physiotherapists are involved in the evaluation and treatment of respiratory patients such as those suffering from Asthma and Chronic Obstructive Pulmonary Disease (COPD). Self-administered inhaler therapy is a treatment strategy used for these patients as it is a rapid form of treatment that is cost-effective and safe with fewer side effects than oral therapy (Hanania et al., 1994). The most commonly used form of administering bronchodilators (BD's) to a patient is via a metered dose inhaler (MDI) (Hanania et al., 1994).

One of the main aims of BD therapy is to decrease airflow limitation, and therefore improve dyspnoea and exercise tolerance (Liesker et al., 2002). It has been reported that even with the best technique of administering BD's via MDI's, only 10-15% of the aerosol reaches the lung. Patients tend to fail to use the MDI's properly when administering BD's with 24-89% having poor technique. This may give rise to clinically relevant problems which may result in poor outcomes in these patients (Hanania et al., 1994). Although it has been recommended that education by health professionals is one of the ways to improve patient technique there is no

concrete data regarding the ability and knowledge of health professionals to use MDI's as very few studies are available (Liesker et al., 2002). From the few studies that were available, it was found that health professionals lack rudimentary skills and elementary theoretical knowledge regarding the use of MDI's. This therefore impacts on their education to patients and the resultant poor patient technique (Hanania et al., 1994; Kelling et al., 1993).

Qualified physiotherapists as well as physiotherapy students are required to educate patients with respiratory conditions such as asthma and COPD on the correct technique of administering BD's via MDI's. Re-evaluation of the inhalation technique should be constant as it takes an average of ten visits for patients to learn it correctly (Muchão et al., 2008). Insufficient practical and theoretical knowledge regarding the correct administration of BD's via MDI's on the part of the physiotherapist could lead to the incorrect demonstration of the technique therefore affecting the learning process.

This could result in poor patient technique, poor effects of the treatment and lack of improvement in the condition (Muchão et al., 2008; Scarfone et al., 2002; Hanania et al., 1994). Physiotherapists and physiotherapy students need to know the indications, precautions, side effects, contra-indications, dosage and the correct steps in administration of BDs via MDI's to effectively manage and educate respiratory patients as problems may arise from incorrect administration of BD's via MDI's (Mikelsons, 2007).

At the universities in the Western Cape undergraduate physiotherapy students are required to do clinical practice as part of their curriculum. Respiratory physiotherapy theory and practical components are introduced to students from 2nd year of study as preparation for clinical practice in 3rd and 4th year. Part of this module includes theoretical and practical knowledge of various respiratory therapies including the correct administration of BD's via MDI's.

The few studies available have each used different methodological designs and outcome measures to determine the knowledge of health

professionals including physiotherapists (physical therapists) with regard to the correct administration of BD's via MDI's. There is a need however for similar studies in developing countries. It has been recommended that future physiotherapists and other health professionals become familiar with these techniques as undergraduates so that after graduation they can both apply their knowledge and participate in the education of other health professionals (Muchão et al., 2008).

No study has been done on the knowledge of undergraduate physiotherapy students regarding the correct administration of BD's via MDI's specifically in the Western Cape. Therefore the aim of this study was to evaluate the knowledge of undergraduate physiotherapy students in the Western Cape regarding the correct administration of BDs via MDIs. Based on the findings of this study, teaching and learning can then be emphasized in the undergraduate respiratory physiotherapy curriculum to ensure that competent physiotherapists graduate.

Methods

Setting and Design

This cross-sectional quantitative descriptive survey included 619 undergraduate students from Physiotherapy Departments at the three Universities in the Western Cape. A convenient sampling method was used as all students at each University could participate in the study. As this is a non-probability sample the results cannot be generalized but will assist in the understanding of the problem.

Procedure

Permission and ethical clearance was obtained from the Senate Research Grants and Study Leave Committee of the University of the Western Cape as well as each Physiotherapy Head of Department. Informed consent was obtained from each participant before commencement of data collection. Data was collected from the 1st, 2nd, 3rd and 4th year students at each University at the times convenient to each Physiotherapy Department.

For ethical reasons the three University Physiotherapy Departments will be referred to as University 1, University 2 and University 3.

Instrumentation

A self-developed English questionnaire with close-ended questions was used. The questionnaire was developed specifically for the purpose and methodology described in this study. Of the very few studies found many used a variety of different methods to obtain information regarding the knowledge of health care professionals regarding BD administration via MDI's (Muchão et al., 2008; Hanania et al., 1994; Kelling et al., 1993).

The methods used in these studies included practical evaluation and some written evaluation in the form of a test or questionnaire and were not all time and cost effective for use in this study. The reliability and validity of their instruments were also not reported on. Thus the content of the self-developed questionnaire was based on findings from the literature from similar international studies conducted (Muchão et al., 2008; Hanania et al., 1994; Kelling et al., 1993) as no validated and reliable tools were available for use in this study.

The content included in the studies used was applicable to the South African context. However due to resource limitation it was not possible to utilize the practical tests used in some of the studies to evaluate health professionals knowledge regarding the correct administration of BD's via MDI's.

The questionnaire contained information regarding university and year of study, age category, gender and where they first learnt about BD administration via MDI as well as questions related to knowledge of BD's, MDI's, the use of these by students and their families, whether students needed to or ever taught patients how to administer BD's via MDI's, the correct steps in administration, knowledge of overdose, side effects and contra-indications. Each question was an individual item. The responses for each item was dichotomized into yes and no, or true and false responses.

The self-developed questionnaire was piloted on 12 randomly selected undergraduate physiotherapy

students for understanding, timing and consistency of or agreement between responses. The test – retest method for reliability was used to determine intra-rater reliability. The questionnaire was administered to 12 subjects and then re-administered two weeks after the first administration date. The results of the pilot study were analyzed. Agreement between responses between the two tests for the 12 participants ranged between 67 and 100% (intra-rater reliability). No changes were needed as all participants reported understanding of the items (face validity). The questionnaire took between 10 and 15 minutes to complete.

Scoring of this questionnaire to determine what was known and unknown to students regarding the administration of BD's via MDI's was purely descriptive with the numbers of yes or no and correct or incorrect responses calculated and then analyzed for significance. Missing or omitted data was scored as incorrect as it could be assumed that students did not know the answer.

Data Capturing and Analysis

The self-developed questionnaire was coded and data was entered into the SPSS version 16 data editor and analyzed. Descriptive data was analyzed using descriptive statistics and presented as frequencies and percentages and one sample t-tests and one way Anova tests were used to determine significant outcomes. Results were significant at a p-value ≤ 0.05 .

Results

Response Rates

A total response rate of 53.31% (n=330) was obtained. The response rate of University 1 was 65.46% (n=127/194), University 2 was 44.2% (n=107/242), University 3 was 50.53% (n=95/188).

Knowledge outcomes of the total population from the three universities

The table below illustrates the knowledge of all undergraduate physiotherapy students regarding the correct administration of BD's via MDI's in terms of numbers and percentages of students who correctly identified concepts relating to BD administration via a MDI as well as significant outcomes.

Table1. Knowledge outcomes of the total population from the three universities

| Question | Number of Students (n and %) | Significant difference (significant p-value=*) |
|--|---------------------------------|---|
| Do you know what a MDI is? | | |
| Yes: | 230/328 (70.1%) | p = 0.00* |
| No: | 98/328 (29.9%) | |
| MDI Definition: | | |
| Correct: | 174/330 (52.7%) | p = 0.00* |
| Incorrect: | 156/330 (47.3%) | |
| Do you know what a BD is? | | |
| Yes: | 254/328 (77.4%) | p = 0.00* |
| No: | 74/328 (22.6%) | |
| BD Definition: | | |
| Correct: | 95/330 (28.8%) | p = 0.00* |
| Incorrect: | 235/330 (71.2%) | |
| In which Year were you taught about BD's and MDI's? | | |
| 1st: | 15/222 (6.8%) | p = 0.00* |
| 2nd: | 193/222 (86.9%) | |
| 3rd: | 11/222 (4.95%) | |
| 4th: | 3/222 (1.35%) | |
| Do you or a relative use a BD via a MDI? | | |
| Yes: | 103/322 (32%) | p = 0.00* |
| No: | 219/322 (68%) | |
| Are BD's useful for Obstructive Lung Disease? | | |
| Yes: | 211/300 (70.3%) | p = 0.00* |
| No: | 89/300 (29.7%) | |
| Have you ever needed to teach a patient to administer BD's via a MDI? | | |
| Yes: | 52/321 (15.8%) | p = 0.00* |
| No: | 269/321 (84.2%) | |
| Have you ever taught a patient how to administer a BD via a MDI? | | |
| Yes: | 49/322 (15.2%) | p = 0.00* |
| No: | 273/322 (84.8%) | |
| Knowledge of correct sequence of steps of administering BD's via a MDI: | | |
| Correct: | 81/294 (27.6%) | p = 0.00* |
| Incorrect: | 213/294 (72.4%) | |
| It is very hard to overdose on a BD administered via a MDI. | | |
| True: | 178/305 (58.4%) | p = 0.00* |
| False (correct answer): | 127/305 (41.6%) | |
| There is a set dosage for the use of BD's administered via MDI's. | | |
| True: | 274/306 (89.5%) | p = 0.00* |
| False (correct answer): | 32/306 (10.5%) | |
| Are there any side effects related to the use of BD's via MDI's? | | |
| Yes: | 248/307 (80.8%) | p = 0.00* |
| No: | 59/307 (19.2%) | |
| Knowledge of correct side effects: | | |
| Correct: | 5/330 (1.5%) | p = 0.00* |
| Incorrect: | 325/330 (98.5%) | |
| Are there any contra-indications related to the use of BD's via MDI's? | | |
| Yes: | 206/293 (70.3%) | p = 0.00* |
| No: | 87/293 (29.7%) | |
| Knowledge of correct contra-indications: | | |
| Correct: | 10/330 (3%) | p = 0.00* |
| Incorrect: | 320/330 (97%) | |

The table below illustrates the knowledge of first, second, third and 4th year undergraduate physiotherapy students regarding the correct administration of BD's via MDI's in terms of

numbers and percentages of students who correctly identified concepts relating to BD administration via a MDI.

Table 2. Difference in knowledge outcomes amongst the different year levels from the three universities

| Question and p-value (most significant p-value = *) | First Year | Second Year | Third Year | Fourth Year |
|--|---------------|---------------|---------------|---------------|
| Do you know what a MDI is? (p=0.00)* | | | | |
| Yes: | 33/91 (36.3%) | 85/98 (86.7%) | 45/58 (77.6%) | 67/81 (82.7%) |
| No: | 58/91 (63.7%) | 13/98 (23.3%) | 13/58 (22.4%) | 14/81 (27.3%) |
| MDI Definition: (p=0.00)* | | | | |
| Correct: | 29/92 (31.5%) | 59/98 (60.2%) | 27/59 (45.8%) | 59/81 (72.8%) |
| Incorrect: | 63/92 (68.5%) | 39/98 (39.8%) | 32/59 (54.2%) | 22/81 (27.2%) |
| Do you know what a BD is? (p=0.00)* | | | | |
| Yes: | 28/92 (30.4%) | 87/96 (90.6%) | 59/59 (100%) | 80/81 (98.8%) |
| No: | 64/92 (69.6%) | 9/96 (9.4%) | 0/59 (0%) | 1/81 (1.2%) |
| BD Definition: (p=0.00)* | | | | |
| Correct: | 13/92 (14.1%) | 31/98 (31.6%) | 13/59 (22%) | 38/81 (46.9%) |
| Incorrect: | 79/92 (85.9%) | 67/98 (68.4%) | 46/59 (78%) | 43/81 (53.1%) |
| In which Year were you taught about BD's and MDI's? (p=0.00)* | | | | |
| 1st: | 5/5 (100%) | 0/5 (0%) | 0/5 (0%) | 0/5 (0%) |
| 2nd: | 6/88 (6.8%) | 82/88 (93.2%) | 0/88 (0%) | 0/88 (0%) |
| 3rd: | 3/54 (5.6%) | 51/54 (94.4%) | 0/54 (0%) | 0/54 (0%) |
| 4th: | 1/75 (1.3%) | 60/75 (80%) | 11/75 (14.7%) | 3/75 (4%) |
| Do you or a relative use a BD via a MDI? (p=0.176) | | | | |
| Yes: | 15/85 (17.6%) | 42/98 (42.9%) | 21/58 (36.2%) | 25/81 (30.9%) |
| No: | 70/85 (82.4%) | 56/98 (57.1%) | 37/58 (63.8%) | 56/81 (69.1%) |
| Are BD's useful for Obstructive Lung Disease? (p=0.727) | | | | |
| Yes: | 55/73 (75.3%) | 56/92 (60.9%) | 42/55 (76.4%) | 58/80 (72.5%) |
| No: | 18/73 (24.7%) | 36/92 (39.1%) | 13/55 (23.6%) | 22/80 (27.5%) |
| Have you ever needed to teach a patient to administer BD's via a MDI? (p=0.00)* | | | | |
| Yes: | 1/86 (1.2%) | 12/96 (12.5%) | 13/58 (22.4%) | 26/81 (32.1%) |
| No: | 85/86 (98.8%) | 84/96 (87.5%) | 45/58 (77.6%) | 55/81 (67.9%) |
| Have you ever taught a patient how to administer a BD via a MDI? (p=0.00)* | | | | |
| Yes: | 0/85 (0%) | 9/98 (9.2%) | 15/58 (25.9%) | 25/81 (30.9%) |
| No: | 85/85 (100%) | 89/98 (90.8%) | 43/58 (74.1%) | 56/81 (69.1%) |
| Knowledge of correct sequence of steps of administering BD's via a MDI: (p=0.00)* | | | | |
| Correct: | 5/66 (7.6%) | 27/92 (29.3%) | 14/58 (24.1%) | 35/78 (44.9%) |
| Incorrect: | 61/66 (92.4%) | 65/92 (70.7%) | 44/58 (75.9%) | 43/78 (55.1%) |
| It is very hard to overdose on a BD administered via a MDI. (p=0.164) | | | | |
| True: | 37/75 (49.3%) | 59/96 (61.5%) | 33/55 (60%) | 49/79 (62%) |
| False (correct answer): | 38/75 (50.7%) | 37/96 (38.5%) | 22/55 (40%) | 30/79 (38%) |
| There is a set dosage for the use of BD's administered via MDI's. (p=0.47) | | | | |
| True: | 68/75 (90.7%) | 87/96 (90.6%) | 49/55 (89.1%) | 70/80 (87.5%) |
| False (correct answer): | 7/75 (9.3%) | 9/96 (9.4%) | 6/55 (10.9%) | 10/80 (12.5%) |
| Are there any side effects related to the use of BD's via MDI's? (p=0.07) | | | | |
| Yes: | 56/74 (75.7%) | 77/97 (79.4%) | 45/56 (80.4%) | 70/80 (87.5%) |
| No: | 18/74 (24.3%) | 20/97 (20.6%) | 11/56 (19.6%) | 10/80 (12.5%) |

| Question and p-value (most significant p-value = *) | First Year | | Second Year | | Third Year | | Fourth Year | |
|--|------------|---------|-------------|---------|------------|---------|-------------|---------|
| Knowledge of correct side effects: (p=0.24) | | | | | | | | |
| Correct: | 1/92 | (1.1%) | 4/98 | (4.1%) | 0/59 | (0%) | 0/81 | (0%) |
| Incorrect: | 91/92 | (98.9%) | 94/98 | (95.9%) | 59/59 | (100%) | 81/81 | (100%) |
| Are there any contra-indications related to the use of BD's via MDI's? (p=0.48) | | | | | | | | |
| Yes: | 52/72 | (72.2%) | 65/90 | (72.2%) | 36/53 | (67.9%) | 53/78 | (67.9%) |
| No: | 20/72 | (27.8%) | 25/90 | (27.8%) | 17/53 | (32.1%) | 25/78 | (32.1%) |
| Knowledge of correct contra- indications: (p=0.05) | | | | | | | | |
| Correct: | 4/92 | (4.3%) | 5/98 | (5.1%) | 1/59 | (1.7%) | 0/81 | (0%) |
| Incorrect: | 88/92 | (95.7%) | 93/98 | (94.9%) | 58/59 | (98.3%) | 81/81 | (100%) |

DISCUSSION

Research has shown that a definite lack of theoretical and technical or practical knowledge exists amongst different health professionals regarding the correct administration of bronchodilators via metered dose inhalers (Muchão et al., 2008; Hanania et al., 1994; Kelling et al., 1993). Few studies regarding this topic are available and each study uses different methods of evaluation of knowledge regarding BD administration via MDI. This study only used a survey questionnaire to evaluate the knowledge of undergraduate physiotherapy students regarding BD administration via MDI unlike other studies that evaluated this knowledge via both survey questionnaires, written and clinical or practical testing of the various health professionals. Even so the current study similarly depicts that there is a lack of theoretical knowledge in all aspects regarding the correct administration of BD's via MDI's which may impact practical skill and patient demonstration and education (Muchão et al., 2008; Scarfone et al., 2002; Hanania et al., 1994).

Physiotherapists are required to teach and demonstrate the use of MDI's in a clinical setting (Mikelsons, 2007). Mikelsons, 2007 and Scarfone et al., 2002 stated that patients wanted more emphasis to be placed on the demonstration of administering asthma medication, one of these being the administration of BD's via MDI's. As the practical technique of BD administration via MDI was not evaluated it could not be determined whether practical skill was as poor as theoretical knowledge as this may further impact on correct patient technique as suggested by the literature (Muchão et al., 2008; Scarfone et al., 2002; Hanania et al., 1994).

Knowledge acquired in connection with BD administration via MDI was obtained in the second year of study amongst all undergraduate physiotherapists at the three universities in the Western Cape with first years showing the least amount of knowledge.

Significantly more than half the students did not know the correct steps in administering a BD via a MDI, the correct side effects and contra-indications and that it is easy to overdose when administering a BD via a MDI and that the dosage that may be given may vary. These are important areas of knowledge that require increased emphasis during teaching and learning of the respiratory module as it has been reported that poor theoretical knowledge of the above on the part of the health professional may result in poor patient demonstration and education with consequent poor patient technique and improvements in the respiratory condition (Muchão et al., 2008; Scarfone et al., 2002; Hanania et al., 1994).

It also indicates that the majority of the students could be hazardous and ineffective in the management of patients with respiratory conditions due to this lack of theoretical and practical experience in the use of BD via MDI. This finding is supported by Hanania et al., 1994.

It was interesting to note that although significantly most students said they knew what a BD was they incorrectly identified definitions of BD's and therefore may have guessed the answer. Although they correctly identified that side effects and contra-indications exist they could not correctly identify the side effects and contra-indications related to this therapy. This is important to note as it shows the

need to question deeper when assessing or evaluating health professionals and particularly students' knowledge about a particular therapy.

In general significantly fewer students reported the need to teach or having taught the technique to patients. This may attribute to the general lack of theoretical knowledge as daily use of this therapy may not be required in all clinical placements and therefore result in lack of experience gained and the possibility of theoretical knowledge being forgotten (Kelling et al., 1983; Muchão et al., 2008). When comparing years of study, significantly more fourth year students needed to teach or had taught patients BD administration via MDI. Thus revision and re-evaluation of theoretical and practical skills is required at this level as students are only taught and evaluated on this in their second year and may forget the skill by the time they reach fourth year and graduate especially if they do not work mainly in the field of respiratory therapy (Hanania et al., 1994).

CONCLUSION

The outcomes of this study suggests that emphasis be placed on the administration of BD's via MDI's and the correct steps, dosage, side effects and contra-indications in order to improve the theoretical knowledge and technical skills required by undergraduate physiotherapy students during clinical practice. These areas need to be thoroughly and accurately covered in theory as well as with constant hands-on practice in the physiotherapy respiratory module taught at the Universities. This will assist physiotherapy students and future physiotherapy graduates in improved, safe and effective management of respiratory patients requiring this therapy as it is suggested that hands on demonstration will eliminate unfamiliarity (Kelling et al., 1983). It is also recommended that studies such as these be conducted with new graduates and long practicing physiotherapists as well as other health care therapists involved in patient education specifically with regards to BD administration via MDI. Based on the findings of this study current teaching and learning practices should therefore be directed towards improving theoretical and practical skills of BD administration via MDI to assist in competent physiotherapists graduating.

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OCCUPATIONAL HEALTH PROMOTION AND INJURY PREVENTION STRATEGIES: THE REHABILITATION PERSPECTIVE

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ABSTRACT:

Introduction: Rehabilitation professionals have demonstrated their commitment to the occupational health speciality which has had a hugely positive impact on injured employees. By utilizing the expertise of specialist rehabilitation professionals, the promotion of occupational health and injury prevention strategies ensures the maintenance of good health in the workplace, legal compliance and supports both employers and employees when health problems occur.

Aim: The aim of this article was to report on the important role of rehabilitation in promoting occupational health and preventing injuries in the workplace.

Methods: A comprehensive but non-systematic search of the literature related to the topic was performed. The databases searched included: Google scholar, PubMed, PubMed Central, AMED (Ovid), BNI (Ovid), CINAHL (EBSCO), Embase (Ovid), HMIC: DH-Data and Kings Fund (Ovid), Medline (Ovid) and Psycinfo (Ovid). Information was only extracted from the database if they were peer-reviewed publications in scientific journals.

Conclusion: Expert rehabilitation is essential for occupational health and injury prevention strategies to be successful.

Keywords: rehabilitation; occupational health promotion; injury prevention strategies

INTRODUCTION

Occupational health (OH) promotion and injury prevention strategies (IPS) have received increased attention amongst rehabilitation professionals (e.g. physiotherapists, occupational therapists, speech and language therapists) showing both positive health and cost benefits (Hochanadel and Conrad, 1993). The primary aims of any rehabilitation professional are to promote health and to prevent injury and disease through health promotion programmes and IPS in order to achieve the highest functional level (Ouellette, Badii, Lockhart & Yassi, 2007). Specific criteria must be designed to identify the training needs and training programmes must address these needs. Only accurate and adequate knowledge of the risks associated with occupational work can empower the employee to identify hazardous working conditions. By proactively promoting health to all employees and implementing successful IPS rehabilitation professionals can make a difference. By ensuring that OH remains a core function in our

practice we can demonstrate our commitment to this speciality. This will have a hugely positive impact on all rehabilitation professions and the extended services we provide.

Rehabilitation professionals experienced with a multi-plan evaluation and treatment of occupational injuries are an essential component of returning employees to the workplace. The focus of rehabilitation is not only to improve motor and sensory function but also to include external factors such as work and home modifications (Steenstra et al., 2006). The emphasis of occupational rehabilitation requires a multidisciplinary team approach for the return-to-work process to be successful and in reducing the overall healthcare burden (Ross, Callas, Sargent, Amick & Rooney, 2006).

The rapid advances in rehabilitation have expanded the role of rehabilitation professionals. Multi-disciplinary teams must provide services that

promote optimal work performance for employees. The continued development of physical rehabilitation will play an important part in making the workplace more productive for all employees (Cheng, Amick, Watkins & Rhea, 2002). Senior management of any organisation has a legal obligation to ensure safe working practices (Keyserling & Smith, 2007). Safety policies and awareness of health and safety principles must be implemented on an ongoing basis. This can create an active and positive co-operation amongst employees to accept responsibility for safety within the organisation (DeLellis, 1997).

AIM

The aim of this article was to report on the important role of rehabilitation in the context of promoting OH and preventing injuries in the workplace. In addition, this article will contribute towards current and future research amongst rehabilitation professionals.

METHODOLOGY

A comprehensive but non-systematic search of the literature related to the topic was performed. Because this article was aimed at providing a perspective of rehabilitation in an OH promotion and IPS context as opposed to a critical review, papers were selected based on emerging themes rather than appraisal. However, information was only extracted from the database if they were peer-reviewed publications in scientific journals.

The databases searched included: Google scholar, PubMed, PubMed Central, AMED (Ovid), BNI (Ovid), CINAHL (EBSCO), Embase (Ovid), HMIC: DH-Data and Kings Fund (Ovid), Medline (Ovid) and Psycinfo (Ovid). The search terms used were grouped into three categories, namely: (1) Rehabilitation; (2) Occupational health promotion and (3) Injury prevention strategies. Synonyms were then applied to formulate additional search terms. Different combinations of the search terms were used to either narrow or broaden the search output. Boolean operators "and" and "or" were used.

This search yielded in excess of 2232 papers, of which only 44 papers were relevant to the topic. Papers appearing as abstracts were read and the full papers of those abstracts that appeared to be

pertinent to this study were acquired. All articles in English were retrieved.

DISCUSSION

OCCUPATIONAL HEALTH PROMOTION

In order to ensure a successful health promotion programme both employers and employees must show a genuine willingness to accept responsibility for health and safety in the workplace. Together employers and employees must negotiate skills training programmes that are effective, efficient and convenient to meet the specific health and safety training requirements of the organisation.

A successful health promotion programme is dependant on several factors involving the leadership role of the employer, the health and safety practices of the employees, the compliance of the organisation towards health and safety legislation and the safety of the workplace (Fuller & Hawkins, 1997; Karadzinska-Bislimovska, Baranski & Risteska-Kuc, 2004; Morreale, Ghiglioni, Bregoli & Corli, 2006; Muto, Tomita, Kikuchi & Watanabe, 1997). The absence of any one of these basic factors may contribute to an increase in occupational injuries, damage to property, loss of production time, loss of employee morale and even death (Proper, Van Der Beek, Hildebrandt, Saur & Seeger, 2004). The level of initial preparation will dictate the success of the presentation for the training programme (Gyekye, 2006). Success of any training programme is essential as training is expensive and trained consultants are accountable to ensure that the sessions are effective are not merely a waste of time and money (Grieco, 1993). There are several key points that are vital in the implementation of a successful health promotion programme. These points are discussed below.

Inclusiveness

In order to maintain safe working conditions, all categories of the workforce must be included in the training programme. This includes employees who work full or part-time and day or night shifts. The health and safety training of each employee must be evaluated in relation to their specific job description requirements and any other working arrangements such as shift work and flextime that may affect their health (Williams, Westmorland, Lin, Schmuck & Creen, 2007). Baseline criteria for the content of the training programme must then be

established using the relevant legislation.

Communication

The communicating of health information to employees may take several forms. These include informal group discussions, general safety promotion workshops, specific in-service training and the development of appropriate training materials for the various targeted groups (Davis et al., 2007). A simple description of safe working practices and health-related issues are not sufficient to ensure safety in the workplace. Procedures need to be demonstrated and practiced during training sessions. Employees must show competency before being allowed to assume duty. In this regard, the employer has an important role in communicating safe working practices through example setting and acknowledging or possibly rewarding the safety achievements of employees (Zohar & Luria, 2003).

Evaluation

On completion of the training programme a thorough evaluation examining the efficacy of the programme must be established. Supervisory reports in conjunction with a management follow-up plan are essential in ensuring the continual surveillance of employees. Effective communication channels linking the feedback from employees on issues of health and safety and employers must be implemented to contribute to the overall safety and productivity of the organisation. Disciplinary measures must be enforced on employees who break the safety rules. However, these measures must be applied carefully and only by those with the authority to do so (Schmidt, 1976).

Commitment

The employer must have a positive attitude and a genuine interest in health and safety. The supervisor has an added responsibility in ensuring that health promotion seminars are adequately attended. In order to promote safe working conditions senior management must establish safety policies and procedures that are relevant to the organisation. These policies and procedures must guide the employee to healthy working practices. The policies and procedures form a framework on which senior management contributes to the legal responsibility to ensure that

employees are provided with a safe and healthy workplace (Rogers, Winslow & Higgins, 1993).

Cost

The extensive costs associated with adequate training have been highlighted by several authors. Preparation time, which may take several hours to research and organize, write and accumulate support materials, proper training materials and a suitable location, audio-visual equipment and refreshments all contribute to the costs of training (Buntin et al., 2006; Nolin & Killackey, 2004; Sherman & Click, 2007). Richard, Kenneth, Ramaprabha, Kirupakaran & Chandu (2001) believes that accurate record keeping must be maintained to demonstrate the completion of the training and to provide the necessary liability protection for the organisation. Previously estimated budgets are thought to be conservative considering the numerous mandatory training requirements, initial employee orientations and regular preventative training sessions (Kogi, 2006). Jardine et al. (2003) believes that senior management must be prepared to dedicate a corporate priority to health promotion in order to reduce or eliminate occupational injuries and disease and achieve a moral responsibility at the same time.

INJURY PREVENTION STRATEGIES

IPS that facilitates the return-to-work of injured employees has grown since the 1960s. These programmes include early identification and treatment, regular surveillance of the worksite and accurate record keeping (Coutu, Baril, Durand, Cote & Rouleau, 2007). Reaching the goal of preventing occupational injuries requires a combined effort from all team members to best evaluate the worksite for potential hazards. To promote injury prevention strategies at the workplace several factors must be taken into consideration. These factors are discussed below.

Knowledge

Prior to performing any task the employee must understand the risks and hazards associated with the activity. Any task has risks and benefits but inadequate knowledge may lead to the employee failing to recognize the risks associated with the activity. The employee must have the required skill and knowledge to perform a task competently.

Insufficient skills contribute to injuries in the workplace (Shaw, Robertson, McLellan, Verma & Pransky, 2006). Increased attention must be given to special populations of the workforce. These include the physically challenged and older employees (Grandjean et al., 2006). According to Akerstedt, Peters, Anund & Kecklund (2005) impaired hearing, vision, mobility and reaction time are some of the factors that may affect work performance.

Work Limitations

The physical and psychological state of an employee can also affect work performance. Physical exhaustion and boredom can result in an employee acting recklessly (Marshall, Barnett & Sayer, 1997). According to Ames, Grube & Moore (1997) alcohol abuse and social problems may disrupt the normal behavioural patterns of employees which contribute to negative emotional states resulting in unsafe working habits.

Ergonomics

A successful injury prevention programme in the workplace can only be achieved by identifying the specific training needs of the employees. This includes a thorough examination of the working practices and workplace layout of each employee. Several studies (Furlow 2002; Stobbe 1996; Waters & MacDonald, 2001) have shown that by applying the basic ergonomic principles in a systematic and logical manner, occupational injuries can be prevented which would ultimately increase employee morale, productivity and quality of work.

Policy and Practice

Employees must be encouraged to evaluate their own workplaces and identify needs that could benefit both the employee and the organisation as planning effective training strategies are both time consuming and expensive. In order to meet the constantly changing needs of the employee, organisations with health and safety policies already in existence must ensure that these policies are updated according to international standards of safety.

Neglecting any aspect of health and safety could result in senior management making wrong decisions which in turn could compromise the safety of the employee with sometimes severe consequences. According to Ross (1994) a

thorough investigation of all safety challenges in the workplace must be comprehensively assessed to avoid concentration on only one aspect.

Dissemination

In order to implement and sustain a successful IP programme certain key elements are essential. These include active participation of all employees, long-term commitment by senior management and a positive attitude of all relevant stakeholders (Tornstrom, Amprazis, Christmansson & Eklund, 2007). A document containing the procedure of implementing the proposed programme in the organisation must be compiled. This document must first be approved by senior management and a policy formulated. Budget constraints, personnel resources, workplace limitations and individual inputs must be scrutinized during the process of formulating this policy (Lahiri, Gold, Levenstein, 2005). Senior management has a crucial role of ensuring that all level of employees are orientated on the new training policy by initiating an in-service programme. This programme should be part of the vision and mission of every organisation.

REHABILITATION PERSPECTIVE

Rehabilitation professionals have a critical role in the management of occupational injuries. This includes a range of services and expertise in assisting injured employees to safely return to the workplace. Critical to the success of any rehabilitation programme is the motivation and willingness of the employee to succeed and the support of the employer to accommodate an employee with an injury. Rehabilitation professionals must align their rehabilitation programme to help the employee participate in the goal determination process and become more proactive in returning to the workplace.

Aims

The main aim of rehabilitation is to focus on the specific rehabilitation needs of the individual employee and the associated social, economic, vocational and cultural implications that may affect the employee, as well as the impact on family, friends and the community. The rehabilitation process involves helping the employee to regain both physical and mental capabilities needed for work and leisure roles (Fritz, Delitto & Erhard, 2003; Ross, Callas, Sargent, Amick & Rooney, 2006;

Steenstra et al., 2006). Since occupational injuries have different clinical presentations a medically based functional assessment prior to rehabilitation intervention is important. The results of this assessment in conjunction with the prognosis and possible side effects of the injury form a baseline to treatment and subsequent assessments must be used to monitor progress and may help with modifications to the treatment approach.

Goals

The goals of rehabilitation should not be viewed as separate entities, as all problems are interrelated. The rehabilitation professional must consider the health issues of the employee, functional status and workplace in order to begin the process of establishing short-term, intermediate and long-term goals. From a healthcare perspective, health promotion and IPS must be implemented to provide a holistic approach to the constantly changing workplace (Ekberg, 1995)

Intervention

A rehabilitative process involves a four-step process. This process includes an evaluation, treatment, re-evaluation and analysis. At each step of the process professional practices are applied and expected outcomes determined. This process is discussed below.

Step 1: Evaluation

In this first step, the employee is evaluated in accordance with the standard operating procedure for injury. The physical, mental and social status of the employee are assessed using standardized testing together with the identification of functional limitations, contra-indications to intervention and potential to improve. A medically based functional capacity evaluation may be conducted to determine the ability of the employee to conduct activities of daily living, work tasks and leisure pursuits (King, Tuckwell & Barrett, 1998). This information is then compared with the specific requirements of their work, leisure and home environment. If the rehabilitation process is expected to be long-term or certain limitations are expected to be permanent, then further evaluation of the work and home environment may be required. The main focus of the evaluation is the employee. The home environment of the employee is only evaluated if the consequences of the injury justify such an

evaluation (McCullagh, 2006; Pflingsten, Frantz, Hildebrandt, Saur & Seeger, 1996).

Step 2: Treatment

The step includes specific treatment based on the nature of the injury, subsequent disability and functional capabilities. The majority of treatment is therapeutic in nature, using techniques such as graded muscle strengthening, focused physical exercise, splinting, cognitive retraining and physical modalities such as ultrasound and heat (Foye et al., 2007). The treatment regime is tailored to suit the individual needs of the employee and gradually increases in accordance with the demands of work that the employee has to eventually resume. Intervention also includes the alteration of the work environment and the restructuring of the home environment for those with long-term or chronic disabilities (McCullagh, 2006; Pflingsten, Frantz, Hildebrandt, Saur & Seeger, 1996). Changes are gradual and may become permanent if the employee has achieved the highest functional level.

Step 3: Re-Evaluation

Throughout the intervention process, re-evaluation occurs on a periodic basis. Baseline values are established during the initial evaluation. Subsequent re-evaluation values are compared against these baseline values to monitor the progress of the employee. These values are of importance in the goal setting process. Re-evaluation includes physical measures of strength, co-ordination, range of movement (ROM) and task performance measures such as level of independence during activities of daily living (Foye et al., 2007).

Step 4: Analysis

During analysis, all significant values are analyzed to identify the strengths and weaknesses of the rehabilitative management. The analysis is only effective if the information gathered is thorough to identify problems and solutions. All information gained during the analysis phase is used to assess the adequacy of the evaluation, intervention and re-evaluation processes. Professional judgements are made and areas of practice are applied to the specific needs of the employee. Thus begins the process of transformation in which information can be integrated to achieve the goals of enhancing employee performance, promoting health and preventing injury (Garg & Moore, 1992).

CONCLUSION

Expert rehabilitation is essential for occupational health and injury prevention strategies to be successful. The outcome of occupational health rehabilitation practice is to deliver a flexible range of pro-active, forward thinking and cost effective OH and IPS designed to meet the specific needs of both the employee and organisation. This can be achieved through the integration of available resources together with early management in order to create the elements of a comprehensive programme for promoting health and preventing injury within the workplace.

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